



Right of Way Cost Estimate Guide

Version: 3.00

This guide has been developed to provide greater depth and direction when preparing Right of Way and Utility Cost Estimates. It provides discussion and examples on how to prepare Right of Way Cost Estimates. In addition, Appendices are attached to provide a glossary of terms specific to Eminent Domain and Right of Way.

It should be noted that information provided in this guide does not set policy. The information is presented to assist the Estimator with evaluating and solving common issues that may surface in preparing R/W Cost Estimates. The Estimator should be aware of and comply with VDOT's Right of Way and Utilities Manual. If there are questions regarding a specific issue this guide does not address, or require clarification please contact the Regional Right of Way Manager of the Appraisal Section or Regional R/W Cost Estimators.

Comments and suggestions for improving the Right of Way Cost Estimate Guide are welcomed and they may be directed to the Regional Right of Way Manager -Appraisals or the Regional Right of Way Cost Estimators (District Office).

Introduction

A properly developed Right of Way Cost Estimate consists of several components, to include:

1. Value of the land/easements
2. Value of the Buildings being acquired
3. Other Site Improvements being acquired
4. Damages to the Remainder
5. Administrative Settlements/Condemnation Increments
6. Administrative Costs, Court Costs and Incidental Expenses
7. Right of way PE Costs
8. Demolition Costs
9. Hazardous Material Removal
10. Property Management
11. Relocation Assistance
12. Contingency
14. Utility Estimate (several components)
15. Comments.

This Guide will briefly discuss requirements and common practices for developing a supported Right of Way Cost Estimate.

Note: This guide and its content are based on best appraisal practices.

VDOT Right of Way Cost Estimate guide revisions

Revision Effective Date	Version	Chapter	Section	Page*	Revision Notes
5/17/2021	1.00				Initial release of the guide
5/26/2021	2.00			3	Table of revisions was added to the guide.
		8	Contingency	18,19,20,21,22	Updated estimating contingency.
6/11/2021	3.00	8	Contingency	22	Added discussion on justification for chosen contingency

***Note: Page numbers on previous revisions may change as result of subsequent revisions.**

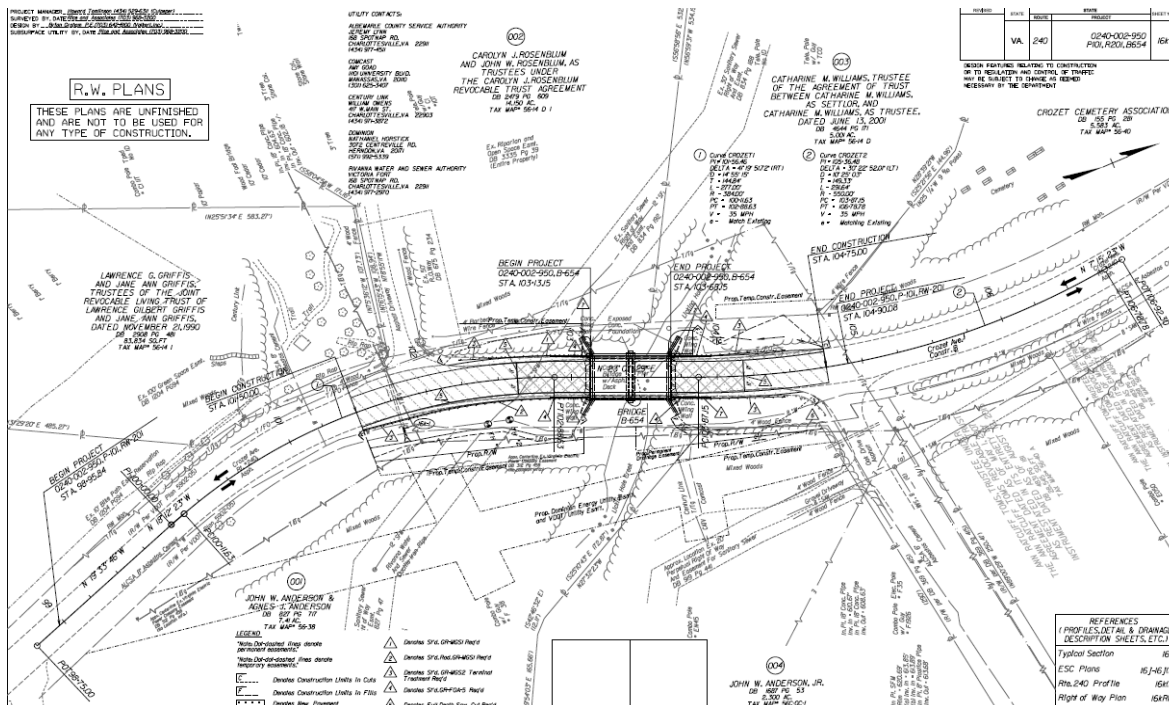
COST ESTIMATE GUIDE Table of Contents

1. Right of Way Data Needed to Start an Estimate	5
2. Developing a Cost Estimate	7
3. Researching Comparable Sales and Estimating Price per Square Foot or Acre .	8
4. Estimating Values of Buildings, Improvements and Damages and Damages to the Remainder	11
5. Determining Condemnation Increment, RW Admin Costs, Court Costs and RW P.E. Costs.....	13
6. Relocation Costs, Property Management and Total Acquisitions	14
7. Filling out the PCES Form	17
8. How to determine the Contingency in a Right of Way Estimate:.....	19
9. Utility Costs	23
10. GENERAL TOPICS AND DISCUSSION POINTS	25
A. Lost Profits	25
B. Eminent Domain and Highest and Best Use Considerations.....	26
C. Types of Easements	27
D. Types of Damages.....	32
E. Cost to Cure Damages.....	33
1. Fencing	34
2. Property Pins	35
11. RIGHT OF WAY DEFINITIONS FOR APPRAISALS	36

1. Right of Way Data Needed to Start an Estimate

Before starting a Right of Way estimate, several pieces of data are needed, most importantly are a plan sheet and a RW data sheet (For Smart Scale an aerial sketch with proposed rights of way shown and an Excel datasheet reflecting the areas of the anticipated rights of way, could be accepted as alternates).

Example of Plan Sheet:



Example of Smart Scale Sketch:



Typical Right of Way Data sheet:

PROJECT MANAGER: (Name) (Address) (City/County) (State) SURVEYED BY: (Name) (Address) (City/County) (State) REGION: (Name) (Address) (City/County) (State) SUBSURFACE UTILITY BY: (Name) (Address) (City/County) (State)										SHEET NO. 15b						
RIGHT OF WAY DATA SHEET										DESIGN FEATURES RELATING TO CONSTRUCTION OR ITS REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT City/County: Albemarle UPC No.: 110001						
Parcel Information				Area: Areas greater than or equal to 1 acre will be shown in acres to 3 decimal places (x.xxx AC). Areas less than 1 acre will be shown in square feet (x,xxx SF).												
Number	Landowner Name	Sheet Number	Deed Acreage	Remainder Acreage	Fee Take Summary (SF)			Permanent Easements (SF)			Utility Easements (SF)			Temporary (SF)	Proffers Yes/NO	
					Total	Prescriptive	Non-Prescr.	(Drainage)	(Shape)				Electric			V001
001	JOHN W. ANDERSON AND JAMES J. ANDERSON	15a	7.410	7.362	2,104			580						13,523	1,418	
002	CAROLYN J. ROSENBLUM AND JOHN W. ROSENBLUM AS TRUSTEES UNDER THE CAROLYN J. ROSENBLUM REVOCABLE TRUST AGREEMENT	15a	14.150	14.150										525		
003	CATHARINE M. WILLIAMS, TRUSTEE OF THE JOINTENANCY OF TRUST BETWEEN CATHARINE M. WILLIAMS, MICHELLE L. WILLIAMS AND CATHARINE M. WILLIAMS AS TRUSTEES OF ALBEMARLE COUNTY, VIRGINIA	15a	5.001	5.001										780		
004	JOHN W. ANDERSON, JR.	15a	2.300	2.288	594									4,863	990	

Example of Smart Scale Data sheet:

ORANGE COUNTY GIS DATA				EASEMENTS					
PARCEL NO.	PIN	LANDOWNER	TOTAL ACRES	FEE TAKING SF	FEE REMAINDER ACRES	PERMANENT SF	UTILITY SF	TEMPORARY SF	TEMPORARY (ENTRANCE) SF
001	USL 13-A	LAKE OF THE WOODS ASSOCIATION INC		6,993.00	-0.161	2,120.00	4,873.00		
002	24-7C	EVANS, JAN A K ET ALS	3.445	-	3.445			513.00	
003	24-7D	EVANS, JAN A K ET ALS	3.445	-	3.445			1,249.00	
004	24-7E	EVANS, JAN A K ET ALS	4.752	-	4.752			1,202.00	
005	24-11D	NATHAN PROPERTIES LLC	0.402	-	0.402			850.00	
005A	24-11B	STEICO INC	1.58	-	1.580			620.00	
006	24-8	COMMONWEALTH OF VIRGINIA	48.580	-	48.580			17,184.00	
007	24-10A	JEFFERSON NATIONAL BANK	1.600	-	1.600			24,335.00	
008	24	COUNTY OF ORANGE	2.970	-	2.970			3,307.00	

The plan sheet/aerial sketch must show the proposed right of way needed for the project, to include showing any properties that will be impacted and parcels that will lose/have a change of access. The plans/aerial sketch must show the proposed Fee Right of Way, Temporary Construction Easement, Prescriptive Right of Way and any Permanent Easements, including proposed utility easements. If utilities are not labeled on the plans/sketch, the Cost Estimator will need to enlist the help of the Utilities Relocation Coordinator to determine impacted areas and location of relocated utility easements. Parcel numbers should be marked on the sketch as well, which should correlate with the RW Data Sheet.

The Estimator should contact the Project Manager for further details that are specific to the project, such as any potential RW issues with landowners, proposed site plans, any project assumptions made by L&D and/or any other information that may be helpful in the preparation of the estimate.

2. Developing a Cost Estimate

The next step in preparing an estimate is setting up a parcel-by-parcel worksheet. There are a few different templates available. One example, shown below, was developed by the RW team, and contains a parcel-level breakdown of RW areas and typical RW costs to be considered. The Estimator begins collecting data in order to complete these worksheet(s) with the pertinent information, such as the County Assessment values, zoning designation and general information.

PARCEL #	001	TAX MAP #	0561-01-0003B	Zoning	R-1	LAND	\$ -	
ASSESSMENT	LAND	\$ 1,872,960	\$ 5.00			BUILDING	\$ -	
	IMPROV.	\$ 31,300,080				IMPROVEMENTS	\$ -	
		SUBJ. SIZE	8.599			DAMAGES	\$ -	
EST. FMV. PER ACQUISITION	SF/AC/SM			%		TOTAL		\$ -
	FEE		SF/AC/SM		\$ -			
	Pres		SF/AC/SM		\$ -			
	PDE		SF/AC/SM		\$ -			
	UTILITY		SF/AC/SM		\$ -			
	TCE		SF/AC/SM		\$ -			
	-Type:							
4726 WEST OX RD; COMMONWEALTH OF VIRGINIA								

Estimator should add the proposed areas from the RW Data Sheet. Easement percentages should be applied based on their impact to the remainder, per VDOT guidelines.

PARCEL #	001	TAX MAP #	0561-01-0003B	Zoning	R-1	LAND	\$ -	
ASSESSMENT	LAND	\$ 1,872,960	\$ 5.00			BUILDING	\$ -	
	IMPROV.	\$ 31,311,080				IMPROVEMENTS	\$ -	
		SUBJ. SIZE	9			DAMAGES	\$ -	
EST. FMV. PER ACQUISITION	SF/AC/SM			%		TOTAL		\$ -
	FEE	130,680	SF/AC/SM		\$ -			
	Pres		SF/AC/SM		\$ -			
	PDE	5,000	SF/AC/SM	40%	\$ -			
	UTILITY	2,000	SF/AC/SM	30%	\$ -			
	TCE	30,000	SF/AC/SM	20%	\$ -			
	-Type:							
4726 West Ox Rd, Commonwealth of Virginia;								

Estimator should determine the market value for the land, along with the value of the building and improvements that will be acquired or impacted by the project for each parcel.

When researching comparable sales, ideally the estimator should research comparables with similar attributes to the subject property/parcel, such as:

- Highest and best (use must be the same or similar to the subject property; should also research the proposed future use per the locality's future comprehensive plan);
- Zoning is the same or similar as the subject property;
- Size and shape is similar to the subject property;
- Other criteria such as flood plain, topography, **location**, etc.

It is suggested to summarize the comparables that best match the subject property (ies) in a spreadsheet. (*See below for example*)

Then based on the best comparable sales collected, the estimator can estimate the price per square foot or per acre for each subject property/parcel.

Address	PIN	Sale Date	Sale Price	Acres	\$/Ac	\$/SF	Zonin	Comments
2625 Centreville Rd		1/9/2016	\$ 3,659,000	4.08	\$ 896,814	\$ 20.59		Long skinny lot on Rte 28.
4101 Pepsi Pl	0341-01-0002A	10/6/2018	\$ 3,693,121	4.16	\$ 887,769	\$ 20.38	I-5	Rectangle lot on the corner of Rte 50 and Stonecroft.
15400 Lee Hwy	0641-03-0001	9/25/2020	\$ 280,000	4.17	\$ 67,146	\$ 1.54		Irregular shaped lot but with frontage road on Rt 29.
Rte 28 & Bradenton Dr	0653-01-0040A	3/5/2017	\$ 2,600,000	5	\$ 520,000	\$ 11.94	PDH-3	Regular shaped lot with road frontage on Rte 28.
14530 Lee Rd	0343-01-0022	6/5/2020	\$ 1,900,000	5.2	\$ 365,385	\$ 8.39	I-3	Irregular shaped lot on a side road for rte 50.
Chantilly Crossing Ln	0343-13-0003	9/5/2019	\$ 5,000,000	5.2	\$ 961,538	\$ 22.07		Triangle shaped lot but is a corner lot.
14800 Old Lee Rd	0432-01-0002	3/30/2020	\$ 1,025,000	5.38	\$ 190,520	\$ 4.37	I-3	Long skinny lot. Best use is assemblage.
3720 Glorus Rd	0332-02-0018	4/4/2016	\$ 1,550,000	5.43	\$ 285,451	\$ 6.55	I-3	Corner lot near Chantilly AHQ. Industrial area.
14715 Old Lee Rd	0441-04-0043B2	6/8/2017	\$ 2,000,000	6.65	\$ 300,752	\$ 6.90	I-5	Irregular shaped lot right on Old Lee Rd.
4481-4483 Walney Rd		11/11/2018	\$ 1,275,000	8.71	\$ 146,383	\$ 3.36	I-3	Irregular shaped lot but was split into two parcels. Right on Walney road.
3880 Dulles South Ct	0332-01-0001	12/26/2016	\$ 1,150,000	9.41	\$ 122,210	\$ 2.81	I-3	Irregular shaped lot with no direct access to a road.
Sprague Ave		2/28/2021	\$ 11,283,025	9.76	\$ 1,156,048	\$ 26.54	PRM, R-1	Irregular shaped lot near the metro and Rte 66.
6595 Springfield Center Dr		12/1/2016	\$ 98,095,000	11.67	\$ 8,405,741	\$ 192.97		Odd shaped lot. Part of the project.
14361 Newbrook Dr	0441-01-0006G	1/1/2021	\$ 9,500,000	21	\$ 452,381	\$ 10.39		Irregular shaped lot near Rte28 and Westfields Blvd.
4620 Forest Hill Dr		9/9/2019	\$ 3,000,000	29.05	\$ 103,270	\$ 2.37		Good shaped lot but behind other tracks of land.
6761 Bull Run PO Rd		11/24/2018	\$ 2,100,000	31.66	\$ 66,330	\$ 1.52	RC	Irregular shaped lot broken into 6 parcels.
Bull Run PO Rd	0533-01-0016C	10/19/2020	\$ 1,000,000	34.25	\$ 29,197	\$ 0.67		Irregular shaped lot with no direct access to a road.
Braddock Rd		35/5/2020	\$ 4,250,000	42.14	\$ 100,854	\$ 2.32	RC	Irregular shaped lot broken into 3 parcels.

Easements: The percentage of fee value used to estimate the value of the easement(s) depends on the impact the easement will have on the remaining property. For example, a permanent drainage easement that is used for a storm water pond would probably have more of an impact than a replacement utility easement; therefore, a higher percentage of impact should be applied. Be careful not to reach or exceed 100% for overlapping easements. An example is shown below of percentages that should be considered for each type of easement to reflect the impact of that easement on that property/parcel.

Suggested Percentage of Impact to be considered for Easements

Temporary Construction Easement	10% - 15% per Year (based upon the construction duration of the Project)
Permanent Easements	35% - 95%
Utility Easement	30% - 40%
Prescriptive Right of Way	10% or a nominal \$100 (only use the nominal \$100 if the 10% value is less than \$100)

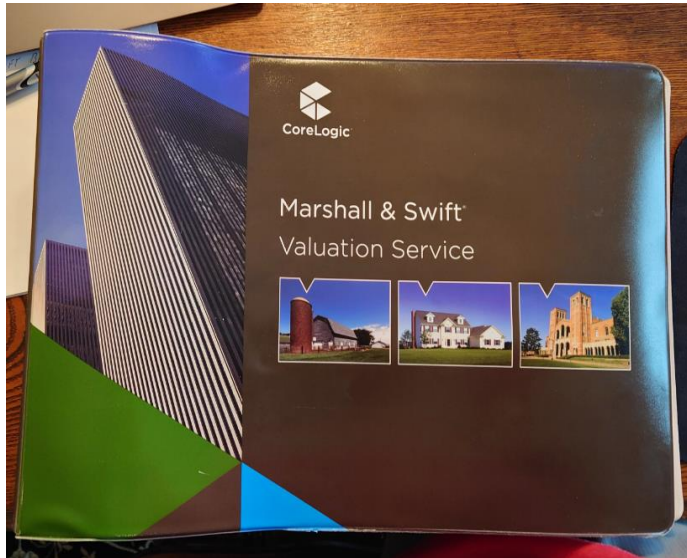
Example of Parcel Estimate Reflecting Type of Acquisition and Percentage of Impact Applied to the Easement(s):

PARCEL #	001	TAX MAP #	0561-01-0003B	Zoning	R-1	LAND	\$ 1,115,900
ASSESSMENT	LAND	\$ 1,872,960	\$ 5.00			BUILDING	\$ -
	IMPROV.	\$ 31,311,080				IMPROVEMENTS	\$ -
		SUBJ. SIZE	9			DAMAGES	\$ -
EST. FMV. PER	SF/AC/SM	\$ 8.01					
ACQUISITION				%		TOTAL	\$ 1,115,900
	FEE	130,680	SF/AC/SM		\$ 1,046,800		
	Pres		SF/AC/SM		\$ -		
	PDE	5,000	SF/AC/SM	40%	\$ 16,100		
	UTILITY	2,000	SF/AC/SM	30%	\$ 4,900		
	TCE	30,000	SF/AC/SM	20%	\$ 48,100		
	-Type:						

4726 West Ox Rd, Commonwealth of Virginia; Valued at \$3,000,000;

--	--	--	--	--	--	--	--

4. Estimating Values of Buildings, Improvements and Damages and Damages to the Remainder



Estimating the value of buildings and/or site improvements and damages can involve using several resources. The Estimators can use past appraisals, comparable sales, Marshall and Swift Valuation Service Guide (M&S), interview with market participants and/or other appraisers to estimate the value of building(s) and other site improvements. While M&S is a nationally recognized Cost source, cost does not always equal value. For example, landscaping for a residential property may cost \$ 10,000 for purchase and installation; however, it may only contribute \$ 3,000 in market value.

CHAIN LINK FENCES

Average cost per linear foot of galvanized steel fence, including complete installation on 2" round or "H" posts set in concrete, 10' on centers. Rails, barbed wire and gates are given as additives to the base costs. Gates are priced on a per-gate basis.

TYPE OF MATERIAL	HEIGHT				
	4'	6'	8'	10'	12'
2" mesh, #7 wire.....	14.20	20.70	27.00	33.25	39.25
#9 wire.....	12.20	17.75	23.35	28.75	34.00
#11 wire.....	10.50	15.15	19.90	24.55	29.25
Add for rails.....	2.33	2.33	2.53	2.53	2.53
Add for 3-strand barbed wire.....	3.03	3.03	3.40	3.40	3.40
Add for barbed coils.....	11.65	11.65	12.40	12.40	12.40
Add for privacy slats.....	7.08	10.80	14.55	18.60	22.30
Add 14% for aluminum or add 20% for vinyl-covered wire. For fabric wind screen, add 0.58 – 1.13 per square foot. For security micro-mesh, add 0.82 – 1.58 per square foot.					
Gates, 3' wide.....	276.00	353.00	414.00	—	—
5' wide.....	358.00	494.00	605.00	740.00	—
10' wide.....	595.00	740.00	855.00	965.00	1080.00
15' wide.....	745.00	960.00	1120.00	1260.00	1410.00
20' wide.....	920.00	1170.00	1350.00	1550.00	1710.00
25' wide.....	—	—	1450.00	1680.00	1830.00

Another example is when estimating the market value of a relatively new five (5) foot tall chain-link fence, M&S could be utilized. See the chart to view an example.

Damages can be divided into two categories: Curable and Incurable Damages.

Curable damages result when the cost to replace/repair an item costs less than the loss in value if the item were not replaced. For example, the construction of a retaining wall may cost \$10,000; however, if the retaining wall was NOT replaced, the loss of value to the remainder would be \$50,000.

Then, the *curable*, or cost to cure, damage in the amount of \$10,000 is considered appropriate to include in the estimate. The reverse is also applicable. If the loss of value due to the cut/fill is \$50,000 but the retaining wall cost is \$100,000; then, incurable damages in the amount of \$ 50,000 would be paid/should be included in the estimate. Property pins are an example of cost to cure damages and should be included on each parcel impacted by fee acquisition.

The Estimator can use past appraisals or estimates, the Marshall and Swift Valuation Service Guide, and/or interviews with appraisers and/or market participants to help determine and estimate damages.

PARCEL #	001	TAX MAP #	0561-01-0003B	Zoning	R-1	LAND	\$ 1,115,900	
ASSESSMENT	LAND	\$ 1,872,960	\$ 5.00			BUILDING	\$ -	
	IMPROV.	\$ 31,311,080				IMPROVEMENTS	\$ 136,000	
		SUBJ. SIZE	9			DAMAGES	\$ 689,300	
EST. FMV. PER	SF/AC/SM	\$ 8.01						
ACQUISITION				%		TOTAL		\$ 1,941,200
	FEE	130,680	SF/AC/SM		\$ 1,046,800			
	Pres		SF/AC/SM		\$ -			
	PDE	5,000	SF/AC/SM	40%	\$ 16,100			
	UTILITY	2,000	SF/AC/SM	30%	\$ 4,900			
	TCE	30,000	SF/AC/SM	20%	\$ 48,100			
	-Type:							
4762 West Ox Rd; Commonwealth of Virginia; Land Valued at \$3,000,000; Improvements: 10'X6' sign-\$15,000; 10 Street lights-\$100,000; 6,000 Sqft of asphalt-\$16,000; 1,000 Sqft of concrete sidewalk-\$5,000; Damages: Property pins-\$1,000; Permanent loss of 20 parking spots-\$200,000; Damages to the remainder set at 25%-\$488,300.								

Using the cost estimate worksheet, it is important to document the specific details of any costs for Improvements and Damages that will be impacted by the project in the cost estimate worksheet (*see example below.*)

As a best practice and whenever possible, the estimator should make a site visit to ensure that all improvements and damages that will be impacted by the project are included in the cost estimate. Google Maps is a useful tool, but it should not be the only resource used by the estimator.

SPECIAL NOTE: If the parcel's total cost of acquisition for all right of way is less than \$500, then you must roundup the total cost for that parcel to \$500. VDOT's policy states the minimum offer amount to any landowner for all RW impacts to their property shall not be less than \$500.

5. Determining Condemnation Increment, RW Admin Costs, Court Costs and RW P.E. Costs

Condemnation Increment, shown as “Condemnation increase” on the PCES form: the value that is negotiated or settled above the appraised value of the acquisition needed. Example: appraised value equals \$10/SF; however, settlement with the landowner was reached at \$15/SF. This “condemnation increment” accounts for the additional \$5/SF. RUMS can create a Certificate Cost Analysis Report for a particular County or Locality, which can then be used to get a better idea of the exact percentage condemnation increment that is appropriate used for that specific project.

Depending on the location and complexity of the project, these administrative settlements/condemnation increments can vary greatly; however, typically using an estimate of 30-60% above the determined acquisition values would capture a majority of these costs.

COURT COST and RW ADMINISTRATIVE COSTS/INCIDENTAL EXPENSES and RW P.E COSTS

Court Costs: This figure accounts for VDOT Attorneys, Expert Witnesses, Litigation Expenses and potential Landowner’s Attorney and Expert Witness expenses.

For Commercial - **\$70,000 - \$80,000, per parcel**

For Residential - **\$50,000 - \$60,000, per parcel**

Right of Way Administrative Costs and Incidental Expenses

The estimate must include the staff cost for Right of Way Personnel to acquire the right of way, and these costs are considered as RW Administrative Cost. Typically it is estimated on a per parcel basis and also takes into account the complexity and size of the project. These costs can vary; however, guidelines are shown below:

- 1. Small projects (under 5 parcels):** Typical project- \$10,000 per parcel.
- 2. Large projects (Over 5 parcels):** \$12,500 per parcel.
- 3. Large and/or Complex projects:** \$15,000 to \$20,000 per parcel. Example of a complex project would be any RW work that impacts Park Authority Properties or any parcel impacted by Open Space Easements such as Virginia Outdoors Foundation (VOF) or Historic Properties.

NOTE: When acquiring property from parcels requiring “**Special Negotiations**” such as the Railroad, Federal Government, military bases, etc., the estimator should allow \$20,000 to \$30,000 per parcel for Administrative Cost. Please also include a one-time admin cost of \$15,000 extra when dealing with the National Park Service, regardless of parcel count for the project.

RW P.E. Costs

These costs account for salaries of the Cost Estimator(s) and other Right of Way personnel who work on the project before the Right of Way’s Notice to Proceed Authorization is issued. Below is the guideline that VDOT currently uses.

Typical P.E Costs used by VDOT:

1 – 5 Parcels	\$5,000
6 – 15 Parcels	\$7,500
16 – 25 Parcels	\$10,000
26 – 50 Parcels	\$20,000
51 – 100 Parcels	\$30,000

6. Relocation Costs, Property Management and Total Acquisitions

Relocation Cost Estimating

The first consideration is whether the property is residential or commercial. Each property type has particular costs that the displacee may be eligible

Start with the known categories:

Residential (Owner)

- Move costs (not capped, but actual, reasonable and necessary)
- Price Differential payment (the amount by which the cost of a replacement dwelling exceeds the acquisition cost of the displacement dwelling)
- Incidental expenses (title search, recording fees, etc.)

Residential (Tenant)

- Move costs (not capped, but actual, reasonable and necessary)
- Replacement Housing Payment (RHP) three comparable properties are chosen for consideration. The calculation is made using the most comparable property (#1 Comp).
Rent + utilities of the #1 Comparable minus rent +utilities of the subject property multiplied by 42 months = RHP

Commercial

- Move costs (not capped, but actual, reasonable and necessary)
- Reestablishment (capped at \$25,000)
- Search cost (capped at \$2,500)

OR

- Fixed payment (In-Lieu, from \$1,000 - \$75,000)

Demolition Costs

- Demolition cost – Cost to cover the demolition of buildings/structures on the property that

will be acquired by VDOT.

- The cost to demolish a house per square foot ranges anywhere from \$2 to \$17 per square foot, with an average between \$4 and \$15. For a complete teardown of a 1,500-square-foot home, rates can range from **\$3,000** in a rural area to **\$18,000** in a densely-populated city.
- The average cost to demolish a commercial building is between **\$4** and **\$8** per square foot. This cost can go up or go down depending on the square footage. The cost of demolishing a commercial building decreases with increased square footage. It costs more to demolish a building with asbestos.
- To determine demolition cost, consider the type of building, the square footage, whether or not asbestos is present and the area where the property is located.

Hazardous Material Removal

- Hazmat Cost – Cost to cover the removal of hazardous materials such as asbestos, oil tankers etc. from the property that will be acquired by VDOT.
- Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.
- Hazardous materials or wastes that have been released into soil, surface water, ground water, or air are contamination. Properties on which hazardous materials or wastes are currently handled, or were handled in the past, have the potential to be contaminated. Properties on which hazardous materials or wastes have been mismanaged are almost certain to be contaminated.
- The presence of contamination can dramatically affect the cost, scope, and schedule of a project and create permanent liability for the Department through property ownership and hazardous waste disposal. Contaminated soil and/or water must either be cleaned up prior to construction of the transportation project or specially managed during construction. The necessary special handling, worker safety precautions, disposal of contaminated material, and regulatory agency oversight and approvals increase project costs and can adversely impact the project schedule. Contamination discovered during construction can greatly increase construction costs by temporarily stopping construction during excavation and disposal activities. As a result, contaminated properties shall be identified and avoided if at all possible. If avoidance is not possible, contamination must be carefully and thoroughly evaluated to identify and define its possible effect on the project and the potential future liability for the Department that it might create.
- Each **material** has its own set of abatement standards and **testing**, so the **costs** vary depending on the **substance** you are attempting to eliminate. In most cases, the labor for these jobs ranges from \$15 per square foot for inspection and remediation to over \$10,000 for **removing a material** from an entire **building**.

- [Asbestos Inspection and Testing](#) \$500
- [Asbestos Removal](#) \$475
- [Biohazard cleanup](#) \$3,000 - \$5,000
- [Lead Paint Removal](#) \$8,000 - \$15,000
- [Mold Inspection](#) \$500
- [Mold Remediation](#) \$2,500
- [Radon Testing and Abatement](#) \$200

- Oil Tank Removal Cost
- Removing an oil, fuel or water tank costs \$1,140 on average and typically ranges between \$530 and \$1,803. Aboveground storage tank (AST) removal runs in the \$300 to \$1,500 range. An underground storage tank (UST) removal costs \$1,000 to \$3,500. For hazardous liquid storage and petroleum, add another \$500 to \$1,800 for soil testing and \$500 to \$10,000+ for remediation.

Property Management Cost

Need to expand.

Relocation Assistance

Relocation Assistance are costs to assist families and businesses that will be displaced by a proposed road project. For estimate purposes, you will need to include the following costs:

- Relocation Cost - Cost of actually moving a displaced person or businesses.

When moving a displaced person or business, VDOT must relocate them to a new property that's "decent, safe and sanitary" (aka DSS) and is "functionally equivalent to the displacement dwelling".

If you have any further questions about relocation please visit the VDOT Right of Way Manual or speak with a Relocation Specialist.

Total Acquisition:

A Total Acquisition is a parcel that is being acquired as an entire parcel/property OR is that is severely impacted by a road project, such as losing access to the main road or if the remainder of the parcel is uneconomical to the owner. A total acquisition must be valued at the higher of either 1) Market Value or 2) County Assessment Value.

Comments

The estimator should add comments to the estimate as needed. Here are some examples:

*This estimate assumes that the large billboard on parcel 02 as shown on the plans will not be impacted by the project. If it is impacted, the replacement value of that billboard would add \$20,000 of cost to the estimate.

* Per the sketch the new Frontier Drive goes through the building on parcel 022. So money was given in the estimate for Relocation, Hazmat and Demolition costs.

* Per the PM the rear entrance for the building on parcel 030 will still be able to receive deliveries during the project. No money was given for loss of use. Filling out the PCES Form

Please refer to the exhibit below to learn how to fill out the PCES worksheet.

7. Filling out the PCES Form

1. LAND VALUE			
Prop. Right-of-Way	Total Right-of-Way Project Length (ML + Connections)		ft
	Average width of Existing RW		ft
	Average width of Proposed RW		ft
	Total area of all additional Prop. Right-of-Way		sf
	Approx. % of Prop. CL within		ft
Temp. Eas.	Average Width of parallel Temporary Easements Left		ft
	Total Length of parallel Temporary Easements Left		ft
	Average Width of parallel Temporary Easements Right		ft
	Total Length of parallel Temporary Easements Right		ft
	Approx. % of Prop. CL between		ft
Perm. & Util. Eas.	Total Area of All Replacement Utility Easements AND Select % of RW Cost for Util. Eas.	2,000	sf
	This Box Must Be Empty >		ea
	Total area of All Permanent Easements	5,000	sf
	COST OF LAND (Item # 1)		\$1,115,900

NOTE: Disregard the computed RW costs, because these numbers are unreliable and will make your estimate inaccurate.

Make sure to have 100% in one of the three boxes below or the PCES form will not work.

Approx. % of Prop. CL within	ft	of Exist. CL	100%
Approx. % of Prop. CL between	ft	& ft of Exist. CL	0%
Approx. % of Prop. CL greater than	ft	from Exist. CL	

The next step is to add any values for improvements and damages to the PCES form. Also, include the values for any buildings/structures impacted by the project.

2. BUILDING VALUE	
Based upon comparison to similar, occupied Residential Dwellings in the Project Area, enter the Number of:	
A. Low Cost Residential Dwellings :	0
B. Moderately Low Cost Dwellings :	0
C. Average Cost Residential Dwellings :	0
D. Moderately High Cost Dwellings :	0
E. High Cost Residential Dwellings :	0
Computed Total Residential Dwelling Costs :	\$0
Estimator's Total Residential Dwelling Costs :	\$0
Enter the total estimated cost of ALL COMMERCIAL & INDUSTRIAL BUILDINGS to be taken:	
Note: No Computed Costs Available. Use User Defined Costs Below:	
Estimator's Total Commercial / Industrial Buildings Costs :	
3. OTHER IMPROVEMENTS	
Enter the estimated cost of ALL OTHER IMPROVEMENTS on the Project:	
Computed Total Other Improvements Costs :	\$111,590
Estimator's Total Other Improvements Costs :	\$136,000
4. DAMAGES	
Anticipated % of Parcels Affected by Damages to Remainder :	Very Low
Anticipated Relative Cost Impact of Damages to Remainder :	0
Approximate Number of Parcels Affected :	0
Computed Cost of Damages to Remainder :	\$0
Estimator's Total Cost of Damages to Remainder :	\$689,300
TOTAL ACQUISITIONS (Items # 1 - 4)	
\$1,941,200	

Then proceed to fill in all of the Admin, Condemnation and P.E Costs.

5. ADMINISTRATIVE SETTLEMENTS	
Anticipated % of Parcels Affected by Administrative Settlements :	
Anticipated Relative Cost Impact of Administrative Settlements :	
Approximate Number of Parcels Affected :	0
Computed Cost of Administrative Settlements :	\$0
Estimator's Total Cost of Administrative Settlements :	
6. CONDEMNATION INCREASES	
Anticipated % of Parcels Affected by Condemnation Increases :	50%
Anticipated Relative Cost Impact of Condemnation Increases :	
Approximate Number of Parcels Affected :	1
Computed Cost of Condemnation Increases :	\$0
Estimator's Total Cost of Condemnation Increases :	\$970,600
7. ADMINISTRATIVE COSTS & INCIDENTAL EXPENSES	
Anticipated Relative Cost Impact of Admin. Costs & Incidental Expenses :	
Computed Administrative Costs & Incidental Expenses :	\$0
Estimator's Total Administrative Costs & Incidental Expenses :	\$85,000
8. DEMOLITION CONTRACTS	
Anticipated Relative Cost Impact of Demolition Contracts :	
Computed Costs of Demolition Contracts :	\$0
Estimator's Total Cost of Demolition Contracts :	
9. HAZARDOUS MATERIALS REMOVAL	
Anticipated Number of Demolished Buildings Requiring Asbestos Removal :	
Anticipated Relative Cost of Asbestos Removal from Demolished Buildings :	
Anticipated Number of Other Hazardous Materials Removal Sites :	
Anticipated Relative Cost Impact of Other Hazardous Materials Removal :	
Computed Cost of Hazardous Materials Removal :	\$0
Estimator's Total Costs of Hazardous Materials Removal :	
10. PROPERTY MANAGEMENT	
Anticipated Relative Cost Impact of Property Management :	
Computed Costs of Property Management :	\$0
Estimator's Total Cost of Property Management :	
TOTAL OTHER ITEMS (Items # 5 - 10) \$1,055,600	

Line 6- Enter the condemnation increment (aka “increase”) value onto the form-- both the actual total dollar amount and the percentage you used on the estimate worksheet.


Line 7- Enter Right of Way Admin costs, P.E Costs and Court costs as one total amount. That total should include any Utility Admin costs provided to you by the RW Utility Coordinator.

Completing the PCES form

First, ensure that “Today’s Cost RW Sub-Total” is the same as shown on the estimate worksheet as the Grand Total. You must include the fiscal year that the RW stage will be authorized. VDOT uses 3% a year for inflation costs, to be conservative. RW estimates are always based on unapproved plans. “Participating Cost” should be selected for federally funded projects, and “Non-Participating Cost” should be selected for State or County-funded Projects.


Please reference the pages that follow for step-by-step instructions on how to complete the PCES form. This form will be used in all stages of a project, and will be utilized to enter in budget numbers in RUMS,

Make sure to include all assumptions or comments that you made for the estimate on the Comments tab of the PCES form (example shown below.)



Project Cost Estimating System

COMMENTS



	General / Miscellaneous Comments from CONST, RW, & UTILITY Worksheets	Team Member and Section	Date Entered
1	CN Estimate provided by consultants. Added RW esti	ASD-LnD	02/16/21
2	Right of way estimate completed based on unapproved plans and on a parcel count of 1.	TSA-RW	02/16/21
3	Does not include ROW Utility cost.	TSA-RW	02/16/21
4	Per the PM the building will not be impacted by the project.	TSA-RW	02/16/21
5			
6			

8. How to determine the Contingency in a Right of Way Estimate:

When completing a Right of Way (RW) estimate, a Contingency should be added to each estimate to address the unknowns. Please note, the RW Contingency is separate from and not a part of the Utilities Contingency. The amount of RW Contingency will vary depending on the level of information provided and the current stage of the project plans. Right of Way has developed three (3) sliding scales for estimating RW Contingency, similar to the ones found in the Cost Estimate Manual. RW Contingency should be based on the complexity of a project. Consideration for the complexity of a project is based on many factors, such as the location of the project, zoning of parcels, and area/size of the overall RW impact. Please note that total number of parcels does not solely determine RW complexity.

Most Complex	Moderately Complex	Non-Complex
High number of Relocations and total acquisitions.	Few to no total acquisitions and Relocations.	No total acquisitions
Tends to be larger scale projects with significant impacts to multiple parcels. Such as urban/suburban, interstate projects, Design Build, etc.	Any project with low impacts (strip takes) to parcels. Such as roundabouts, shared use paths, etc.	Simple projects such as sidewalks, adding turn lanes, intersection improvements, R-Cuts, etc.
Acquisition of significant improvements and damages to the remainder.	Can be urban, suburban or rural.	Tends to be more rural but can be urban or suburban.
Special Negotiations (Federal Gov, WMATA, NPS, Local governments, other state agencies, RR, etc.) will be involved.	Few to no Special Negotiations (Federal Gov, WMATA, NPS, Local governments, other state agencies, RR, etc.) will be involved.	No Special Negotiations will be involved.
Most parcels impacted are zoned commercial or industrial. Impact to access.	A mix of residential commercial/industrial parcels.	Can be residential commercial/industrial zoned parcels but tends to be residential zoned parcels.
Location of the project i.e. Northeast Region vs. Western Region. Along with current market conditions.	Location of the project i.e. Northeast Region vs. Western Region. Along with current market conditions.	Location of the project i.e. Northeast Region vs. Western Region. Along with current market conditions.

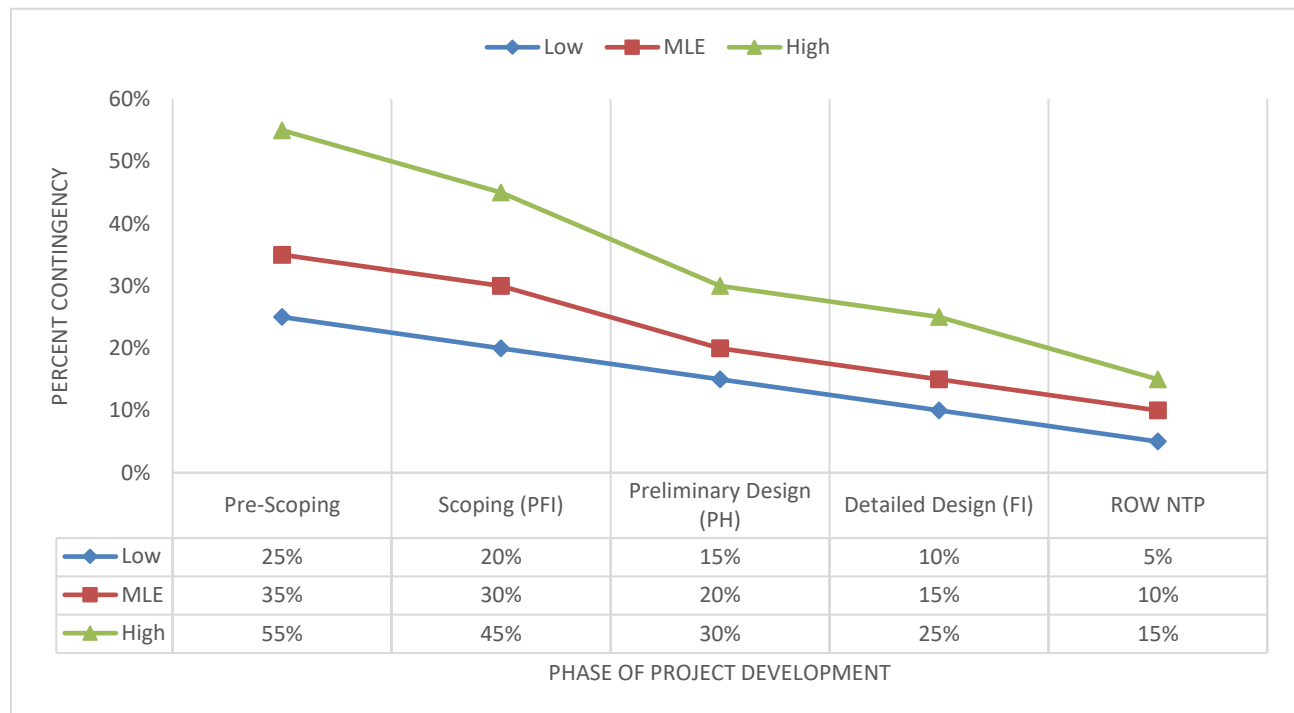
In addition to consideration of the complexity project chart shown above, an estimator needs to consider level of and type of risks that are involved with acquiring right of way. Attempting to shortchange or skip the Risk Assessment process, and then blindly applying Contingency to the Base Estimate can and often does have severe consequences to the budget for VDOT and the project. Please see the list below for RW risks to be considered and accounted for on every project. Note that this list does not encompass all risks.

- Impact to railroad-owned properties
- Landowner challenges to ROW appraisal take more time or money, or both
- Excessive relocation or demolition costs
- ROW Acquisition problems
- Difficult or additional condemnation involved
- Accelerating pace of development in project corridor
- ROW revisions due to alignment changes
- Plan changes after initial estimate
- Impacting same land owner multiple times
- Exorbitant litigation cost, Condemnation Lawyers and delayed Court schedules are difficult to accurately predict in an estimate but must be considered.
- Change in access for a parcel
- Level of plans/sketch and Right of Way Data sheet
- Public opinion/support of the project.
- Impact to unknown facilities, i.e. wells/drainfields/underground tanks
- Special Owners such as: Military Bases; VOF/Conservation Easements; NPS; other Government-Owned Properties.

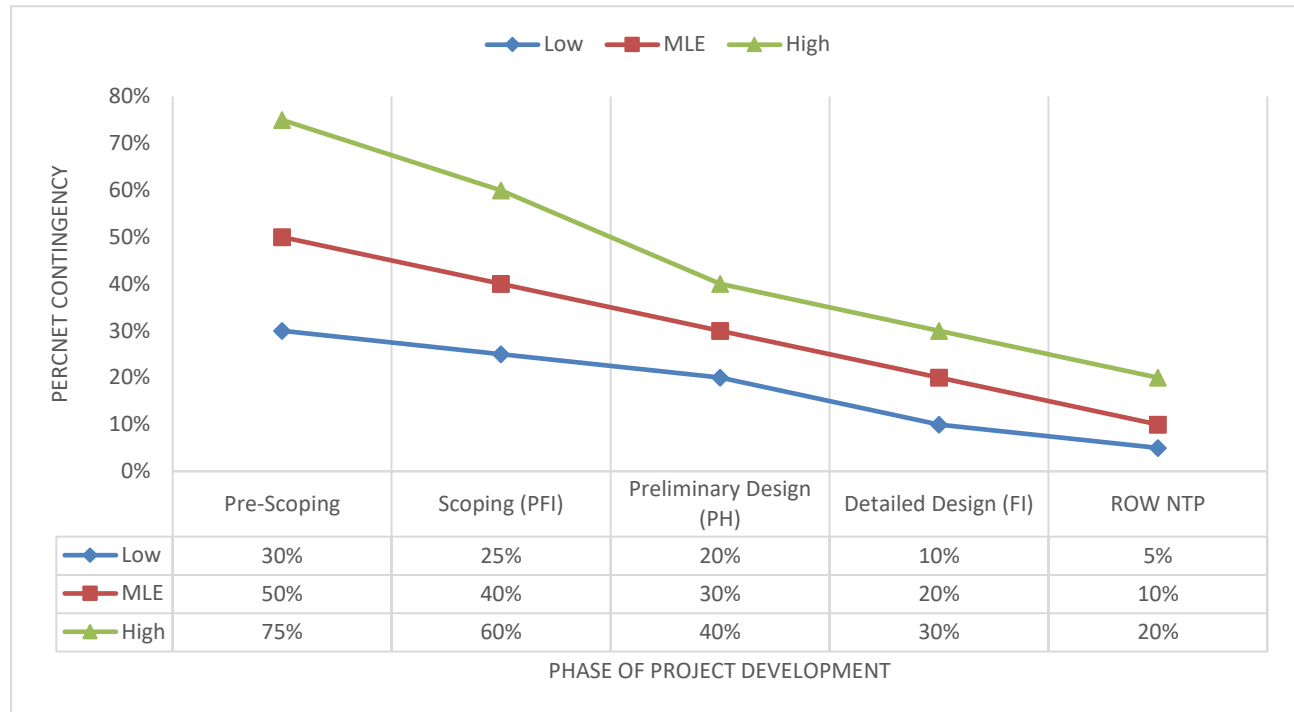
Sliding Scales

Based on the complexity of the project and determined risks, we recommend using one of the three sliding scales below to estimate the appropriate percentage of contingency.

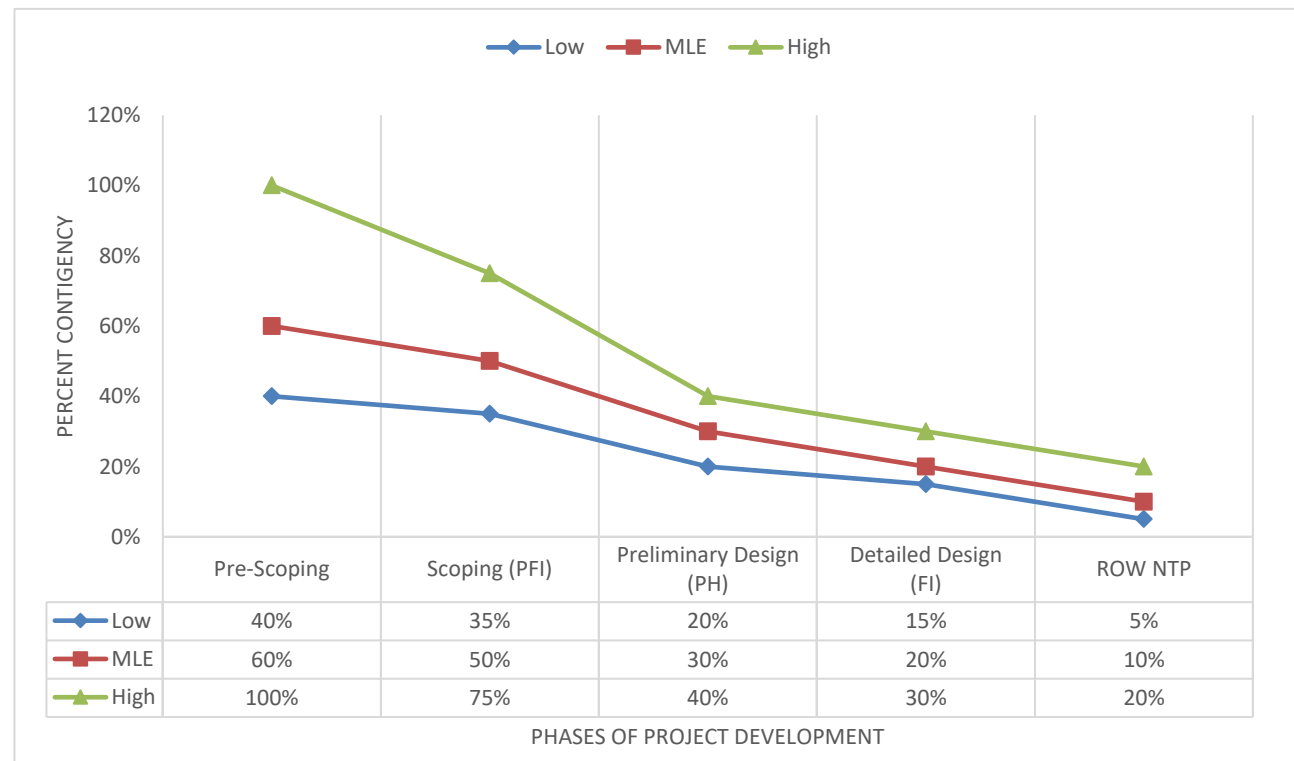
Sliding Scale for Non-Complex ROW Projects:



Sliding Scale for Moderately Complex ROW Projects:



Sliding Scale for Most Complex Projects:



Individual parts of the RW Base Estimate should not include Contingency. Contingency is applied to the sum of the entire RW Base Estimate. The contingency is estimated based on the complexity of the project and the level of data and/or information available, i.e. STARS, Smart Scale, Pre-Scoping through R/W NTP Plans, as discussed above.

Caution must be applied to avoid “double-charging.” In other words, contingency is based on the entire RW Base Estimate (excluding utilities). It would be inappropriate to apply a contingency to individual parcels and then another contingency to the entire RW Base Estimate.

NOTE:

Condemnation Increments and Contingency are separate and independent costs.

Condemnation Increment are the costs increase **TYPICALLY** negotiated or settled, above the appraised value. For example, a \$10,000 offer is made and the settlement is \$15,000. The Condemnation Increment is accounting for the \$5,000 increase.

In **Contingency**, there are occasions when the cost of litigation and/or settlement or court awards are **SIGNIFICANTLY** above the appraised value or the typical settlement. These are not typical. Contingency is an attempt to capture those **unknown risk factors as previously listed above and** the unexpected or unanticipated significant court awards and/or litigation costs. For example, a \$10,000 offer is made; however, through the Court a \$50,000 award was issued along with \$30,000 in litigation costs.

The Right of Way Estimator should provide justification on the chosen contingency percentage.

- Examples:**
- High contingency applied for the following reasons:**
 - 1. Replacement Utility Easement not shown**
 - 2. Potential drainfield impact**
 - 3. Parking on corner parcel temporarily impacted**
 - Low contingency applied for the following reasons:**
 - 1. Impacted properties are rural agricultural**
 - 2. Limited utility impacts anticipated**
 - 3. Limited range of market value**

9. Utility Costs

If your project requires a utility estimate, please first refer to the Utility Manual of Instructions which can be found at:

http://www.virginiadot.org/business/resources/Right_of_way/Utility_Manual02132012_TechRev.pdf

When estimating utilities on projects that are at a pre-scoping level, the following items should be considered:

1. SUE (Utility Survey) Quality D shall be a minimum requirement prior to any utility estimate being established.

- Quality "D" refers to the approximation of utility layouts based solely on utility-provided maps and information gathered from a site survey (above ground or surface level appurtenances).

- A list of utilities present within the project limits shall be included with the estimate. This information can be acquired through the VA811 (Miss Utility) system.

2. Utility conflicts can occur from any of the following scenarios, all of which need to be assessed during the estimation process:

- Excessive cut and/or fill areas
- Drainage design features (pipes, structures, ditches, ponds, etc.)
- Retaining walls and any excavation or piles required to construct the structure.
- Sound walls and any excavation or piles required to construct the walls.
- Bridge features (abutments, bridge deck, etc.) - note: overhead electric lines require a minimum 20' clearance horizontally from all proposed bridge features. 25' is preferred.
- Roadway features (sidewalk, SUP, curb and gutter, proposed pavement, etc.)
- MOT
- Traffic signals/equipment
- Excavation required for any roadway features.
- Undercuts due to unsuitable soils.
- Work to be done within certain proximities of highly sensitive utilities (within 50' of overhead electric transmission lines, underground electric transmission lines, natural gas transmission lines, petroleum transmission lines, large-size water lines, large-size sanitary sewer lines, sanitary force main lines, etc.)
- utility avoidance and impacts to facilities should always be considered
- costs for utility inspection during relocation phase.

3. A lack of information on the roadway design will require certain assumptions to be made to perform a utility estimate and will increase utility risk:

- Where no drainage design exists, assume drainage will exist along all curb lines except at the high points. Assume drainage crossings at any low points. Assume utilities are in conflict with the "assumed" drainage.
- Where no cut/fill lines exist in the design, judgment will be required to assess cuts and/or fills where hills and valleys currently exist in the topography. 3 to 1 slopes will be assumed.
- Where no cross-sections exist, judgment will be required to understand utility impacts based only on the proposed roadway profile.
- Assume all utilities affected by the project have prior rights (100% project cost) unless otherwise explicitly stated by the utility company or by some sort of license agreement (or franchise agreement) made between the utility and the locality.
- Higher contingencies and broader assumptions must be made where roadway design is insufficient. This, in turn, leads to much higher initial estimates for utilities.

4. Statutory Rights

The following chart (from Section 2-8 of the Utility Manual) helps to explain which utilities have
VDOT Right of Way Cost Estimate Guide *6/11/2021 Version: 3.00*

statutory rights and compensable rights on any particular project:

STATUTORY RIGHTS

Owner	Interstate Project in a City/Town	Interstate Project in a County	Primary Project	Urban Project	Secondary Project	State Toll Revenue Bond Project	State Turn-Pike Project
Investor Owned Utility	33.1-55	NONE	NONE	NONE	NONE	33.1 - 269	33.1 - 301
County Owned Electric/Gas	33.1-55	33.1 - 56	33.1 - 56	NONE	33.1 - 69.2	33.1 - 269	33.1 - 301
County Owned Water/Sewer	33.1-55	33.1 - 56	33.1 - 56	NONE	33.1-69.2	33.1 - 269	33.1 - 301
City/Town Owned Electric/Gas	33.1-55	NONE Electric/ 33.1-56 Gas	NONE Electric/ 33.1-56 Gas	33.1 - 44	33.1 - 69.2	33.1 - 269	33.1 - 301
City/Town Owned Water/Sewer	33.1-55	33.1 - 56	33.1 - 56	33.1 - 44	33.1 - 69.2	33.1 - 269	33.1 - 301
Authority /District Owned Water/Sewer	33.1-55	33.1 - 56	33.1 - 56	33.1 - 44	33.1 - 69.2	33.1 - 269	33.1 - 301
CATV Facility	NONE	NONE	NONE	NONE	NONE	NONE	NONE

* PPTA projects fall under the system for the type of project contemplated

10. GENERAL TOPICS AND DISCUSSION POINTS

A. Lost Profits

“Lost Profits” mean loss of business profits from a business or farm operation not to exceed three years from the date of valuation that is suffered as a result of the taking of property on which the business or farm is located, provided the business or farm is owned by the owner of the property, or loss of profits by a tenant whose leasehold interest grants the tenant exclusive possession of substantially all of the property taken. The owner may be compensated for lost profit if he proves with reasonable certainty the amount of the loss and that the loss is directly caused by the taking of the property, not just a result of the project, through the exercise of eminent domain. A form has been created that is to be made available to landowners as a tool to aid in determining eligibility. The form should be filled out and returned to their VDOT representative along with the last three years of tax returns for the business or farm. The agent should encourage the landowner to go on record as to why they believe they are entitled to loss of profits. Please notify Central Office if you have been advised by a landowner that they intend to claim compensation for loss of profits. A claim for loss of profits will not deter acquisition of property needed for a project. However; as always, the potential risks to the Commonwealth should be examined and considered in any counter offer to determine if a settlement is advisable.

Note: Typically VDOT RW Estimators do not include “Lost Profits” in our estimates because of the complexity of the process. History has shown us that landowners are hesitant to provide the documentation required to file a “Loss of Profits” claim.

B. Eminent Domain and Highest and Best Use Considerations

There are several appraisal principles an estimator should consider such as Highest and Best Use, defined as the reasonably probable and legal use of vacant land or an improved property, which is physically possible, appropriately supported, and financially feasible and that results in the highest value, requires that the appraiser analyze four criteria:

Physically Possible
Legally Permissible
Financially Feasible
Maximally Productive

When reporting a subject property’s highest and best use “as if vacant”, VDOT requires that the appraiser provide a brief summary of their analysis for each criterion. For example, after determining what uses are legally permissible to construct on the site, the appraiser should expand on which of these uses are physically possible to construct. Comments should be descriptive in nature versus simply stating which uses are legally and physically permissible. Once the appraiser has defined what can be legally and physically possible to construct on a site, the appraiser must determine and explain which uses are financially feasible to construct as of the effective date of the appraisal and then state which of these uses would result in the greatest value to the property owner.

Comparable land sales used to establish a land value should match the same Highest and Best Use that the appraiser has concluded as if the land were vacant and could be put to its highest and best use. In the event that the land is vacant, and the appraiser concludes that its highest and best use is to hold it for future development, the appraiser is required to specify a time (e.g., one year) when the property could be developed to its highest and best use potential. In addition, the appraiser must also provide support and reasoning for their time estimate as to when future development would occur.

If the property is improved, and the appraiser concludes that its highest and best use as vacant is a different form its current use, the appraiser should state if the existing improvements hold any interim value. If not, the cost to demolish the improvements and make the land available for development to its highest and best use should be reflected in the sales comparison approach for the land value, and if applicable the improved value of the property.

When a partial acquisition is being made, the appraiser must determine if the highest and best use of the “remainder” property will change, when compared to its highest and best use before the acquisition. The appraiser must consider the impact of the proposed roadway improvements on the “remainder” as well as the impact that the acquisition will have on the physical possible, legally permissible, and financially feasible and the maximally productive use of the remainder after the proposed acquisition is made. If the appraiser concludes that the highest and best use of the Remainder property has changed as a result of the proposed partial acquisition and proposed roadway improvements, the appraiser must specify any enhancements and/or damages to the

VDOT Right of Way Cost Estimate Guide

6/11/2021 Version: 3.00

Remainder property when the net effects of these enhancements and/or damages result in a loss in value to the Remainder.

The appraiser should take care to ensure that any highest and best use conclusion made in their analysis is non-speculative, and that their conclusions are adequately supported by market data.

C. Types of Easements

Easements are defined as:

“A right acquired by public authority to use or control property for a designated highway purpose” by the American Association of State and Highway Transportation Officials (AASHTO). and “An interest in land consisting of the right to do an act, otherwise unprivileged, on the land of another. Where the easement is restricted to the use of land, it is appurtenant to the designated land and will pass with a transfer of the land. To create this type of easement, such as a right-of-way, the same formalities as those necessary in a conveyance are usually required.” (AASHTO)

There are several types of easements acquired in eminent domain proceedings, including temporary construction easements and permanent easements (examples include utilities, drainage, slopes, and sight). In addition, VDOT acquires the remaining property rights within prescriptive easements.

Permanent Drainage Easement:

An easement acquired for the placement and construction of drainage structures and access to the structures for an indefinite period of time to maintain the free flow of water. In some instances, a Storm Sewer may be constructed within the permanent drainage easement. A Storm Sewer is an enclosed underground conduit for the drainage of surface water that carries off surface drainage collected by a series of surface inlets.

Slope Easement:

A slope easement can be either permanent or temporary and will increase (fill) or lower (cut) the existing grade of the property. This easement is necessary to provide a transition between the elevation of the new roadway and the existing property elevation when this area is not acquired in fee. The slope is defined as the inclined graded area beyond the shoulder and extending from the shoulder to the natural and undisturbed surface of the ground and this is needed whenever a grade change occurs for the roadway improvement.

Sight Easement:

Sight easements may be acquired to maintain a safe visible distance at curves or at intersections. They are acquired for the purpose of providing drivers an unobstructed view at any given point on roadways.

Temporary Construction Easement:

A temporary construction easement is a temporary interest in land, generally used by the contractor, for the construction of a proposed improvement. This area is located outside of the proposed roadway and it is typically needed for grading purposes. After construction of the public improvement is completed, the temporary easement is extinguished, and the unencumbered fee interest in the land reverts back to the owner. The appraiser should consider the effects of proposed road building activity contemplated by the use of the temporary construction easement and determine if any lasting impact will result to the remainder of the property after the completion of the proposed project. If improvements are located within the area of the proposed construction easement, the appraiser must determine if the improvements will be impacted by the temporary construction easement and, if so, estimate the appropriate compensation.

Right of Way Located within a Prescriptive Easement (a/k/a Prescriptive Right of Way):

A prescriptive easement is created by the use of another's land over a period of time (see the Byrd Act located in Section 33.1-184 of the Code of Virginia). The Byrd Act references “Evidence as to Existence of a Public Road.” Many of our older roads were established in the past without acquiring the underlying property rights, or the acquisition of those rights has not been readily documented. The Byrd act clarified the state’s interest. The state now has a prescriptive easement for public roadway purposes, while the underlying fee ownership remains with the property owner on both sides of the roadway. While the property owner may have purchased and paid real estate taxes on acreage including the easement area, use of it is controlled by the Commonwealth. The easement is typically measured fifteen feet in width on either side of the center of the existing road making a total width of thirty feet. Unlike easements by express or implied grant, an easement by prescription may be extinguished by non-use and the ownership reverts to the subservient estate (property owner).

Please use the chart the on this page to help determine how much of an impact easements will have on a parcel. This will guide you in selecting the appropriate amount of percentage impact for each easement on the estimate worksheet, as shown below.

Easement Type	Description & Potential Impact	Measure of Impact
Drainage (permanent)	To maintain the free flow of water; may involve underground storm sewer or surface facilities. Usually located in low-lying areas having limited utility / Limited, especially if area is in a flood plain or wetlands; however, it is likely no vertical improvements could be constructed in encumbered area	Slight to moderate depending upon potential uses
Slope (permanent or temporary)	To accommodate transition of new grade of road to existing grade of property; can be a fill or a cut / Usually located within limits of a building setback required by zoning	Slight if area cannot be improved before acquisition
Sight distance (permanent)	To maintain a safe visible distance at curves or intersections of roads; may vary in width depending upon topography and extent of curve / Usually located within limits of required building setback but may extend into improvable area	Slight to moderate depending upon area's improvability
Underground utility (permanent)	To accommodate installation of utility lines; most often located along boundary lines of property but may cross through non-adjacent areas / Usually located within limits of building setback but may impact improvement potential if encumbering improvable areas; surface improvements often allowed if use does not conflict with easement rights	Slight to moderate depending upon area's improvability
Overhead distribution or transmission (permanent)	To accommodate installation of utility lines; distribution lines typically along boundary lines of property; transmission lines involve wider easement corridors and often traverse across developable areas of property / Above-ground structures may inhibit access and result in unfavorable view sheds	Moderate to severe
Temporary construction	To accommodate construction activity; usually located adjacent to areas acquired in fee but also used for entrance rehabilitation and removal of improvements; typically encumbers property for the construction period / Temporary impact; improvements in incumbered area are often avoided or	Slight

Overlapping Easements Issue:

Easements are generally valued on the basis of a percentage of the fee value in accordance with the impact the easement has on the underlying property rights. Various types of easements impose different impacts on the remainder, thus the percentage used will not necessarily be the same for each easement. When multiple and overlapping easements are involved, the process of trying to balance out the easements in the after value can become quite intricate and at times frustrating when the remaining property unit value changes from that estimated in the before value. However, it should be noted that when the unit value does not change upon valuing the remainder(s), the appraiser merely needs to deduct the value of the total easements acquired from the remainder property value. As a result, the appraiser is not required to break out the value of individual easements and/or overlapping easements in the “after value” under this scenario.

Treatment – Gross Easement Method:

There are a couple of techniques generally used by appraisers to balance out easement valuations in the after situation.

The simplest approach is to value the gross easement area, or the maximum area encumbered by easements. In the after situation, it is simply a matter of applying the fee value to the unencumbered area. For the area that is encumbered by one or more easements, the appraiser estimates its value as a percentage of the total Fee Simple value. For instance, an appraiser estimates that the encumbered area has a Fee Simple value (as if unencumbered) of \$1,000. Then, the appraiser estimates the total percentage of fee simple value that the gross easement area

represents. In this example, the appraiser estimates that the encumbered area is worth 90% of the Fee Simple Value of \$1,000 because the appraiser determined that the easements have a high impact on the property owner's ability to enjoy their property, thus a higher percentage of value was estimated. The estimated value of the Gross Easement Area is \$900 (\$1,000 x 0.90). Upon estimating the value of the Gross Easement Area, the appraiser can then segregate this total value and estimate the value of various easements located within the Overlapping Easement area. For example, the area encumbered by the water line is equal to 25% of the total encumbered value, the area encumbered by the sewer line equals 25% and the power line easement represents 50%. Under no circumstances should the value of an overlapping easement exceed the fee simple value of the land that it encumbers.

An example of this method is shown below:

Value of the Property:									
Land	45,000	SF	x	\$1.00	=				\$45,000
Value of the Acquisition:									
Fee Acquisition	5,000	SF	x	\$1.00	=				\$5,000
Gross Ease. Area	3,700	SF	x	\$1.00	x	30%	=		\$1,110
Total Value of the Acquisition	=	\$6,110	Value of the Remainder before						
Damages/Enhancements:	=	\$38,890							

When using the Gross Easement Area, the appraiser is required to allocate value to the individual easements. An allocation of the estimated value attributed to each easement is shown below. The appraiser will be prompted to provide this information in the VDOT Executive Summary of any form report completed. In the event that the appraiser is requested to complete a narrative report for VDOT, the appraiser may calculate this allocation in an Addendum and enter the results in the body of the appraisal report. The appraiser should consider the relative area the easement occupies as well as the relative impact on the use and value of the property. An illustration follows that assumes the Drainage Easement has the greatest impact at 50% and the remaining power and phone easement have an equal impact of 25% each:

Gross Ease. Area	3,700	SF	x	\$1.00	X	30%	=	\$1,110	
Power Ease.	\$1,110				X	25%		\$277	
Phone Ease.	\$1,110				X	25%		\$278	
Perm. Drain. Ease.	\$1,110				x	50%		\$555	

Treatment – Breakdown Method

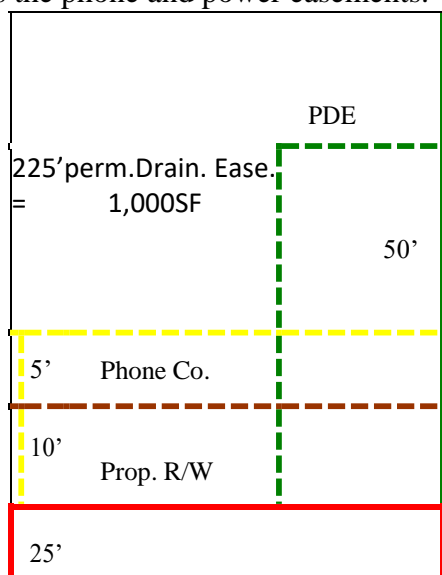
A more precise method is to complete a breakdown accounting for each type of easement that is located in the overlapping areas. The appropriate percentage of fee value is applied to each type of easement. This method requires careful computation of areas in order to determine an accurate valuation. It may be helpful to correlate the various easements and overlapping areas by developing a sketch itemizing the easements by type, area, overlapped portions, and applicable percentage rate. This will enable the appraiser to allocate the easement areas and their respective estimated values so that their values add up to the total value of the area encumbered by the Overlapping Easements.

Reasoning

Although the valuations derived by each of the above methods may differ slightly, both are valid approaches to balancing out easements in the after value. While the breakdown method may be more precise, extremely complex situations may be encountered where the gross easement method would be more practical to use. The appraiser should carefully select the most appropriate method, being sure that the rationale is reasonable and that it can easily be understood by the reader of the report.

Example

The sketch below illustrates a typical VDOT right of way acquisition. The phone company easement is overlapped by the power company easement. A permanent drainage easement overlaps the phone and power easements.



Whole Area	=	45,000 SF
Fee Acquisition	=	5,000 SF
Remainder	=	40,000 SF
Power Co. Ease.	=	3,000 SF
Phone Co. Ease.	=	2,000 SF

Using the breakdown method, compensation is allocated to the individual easement areas. In the previous example shown, the power company easement is overlapped by the phone company easement. The power easement is valued at 20% and the area overlapped by the phone easement at an additional 10%, or a total of 30%. The drainage easement is valued at 50% of fee value and overlaps 300 SF of the utility easements. If it is determined that no additional impact is caused by overlapping easements, the larger easement can be designated as the dominant easement and the value assigned to it. The subordinate easement is then shown in the summary as “No Value” with a footnote explaining why.

This example assumes that the power company easement is valued at 20% of fee. The appraiser believes that the area encumbered by both the phone and power company easements is worth 30% and is therefore including the phone company easement at 10% of fee simple value which represents the increment. The permanent drainage easement is valued at 50%.

In the after value, the area that is encumbered only by the power easement totals 900 square feet. The value of the remaining property rights for this area is equal to 100% less the percentage of value placed on the easement's acquisition value or 80% (100%-20%). The combined phone company and power company easement area that is located outside the permanent drainage easement area equals 1,800 square feet (10 feet by 180 feet). The value of the remaining property rights for this area is equal to 100% less the percentage of value placed on the

VDOT Right of Way Cost Estimate Guide

6/11/2021 Version: 3.00

combined phone and power easement area or 70% (100%-20%-10%).

The area that is encumbered only by the permanent drainage easement equals 700 square feet (20 feet by 35 feet). The value of the remaining property rights for this area is equal to 100% less the percentage of value placed on the easement's acquisition value or 50% (100%-50%). The area that is encumbered by both the permanent drainage easement and the power company easement equals 100 square feet (20 feet by 5 feet). The combined easements total 70% of fee simple value (50% plus 20%). The value of the remaining property rights for this area is equal to 100% less the percentage of value placed on the easement's acquisition value or 30% (100%-70%). The area that is encumbered by the permanent drainage easement and the combined power and phone easement equals 200 square feet (20 feet by 10 feet). The value of the remaining property rights for this area is equal to 100% less the percentage of value placed on the easement's acquisition value or 80% (100%-50%-30%).

The after valuation indicates the net areas of the individual easements. The value of each one is computed at the rate applicable to that portion of the easement. In addition, the value of the total overlapping easement should never exceed 100% of the fee simple value.

D. Types of Damages

In condemnation, damages are defined as the loss in value to the remainder in a partial taking of a property. Generally, the difference between the value of the whole property before the taking and the value of the remainder after the taking is the measure of the value of the part taken and damages to the remainder" (The Dictionary of Real Estate Appraisal, 3rd edition: Appraisal Institute). Damages cannot result when VDOT acquires the entire ownership because compensation is made for the acquisition of the total property, and there is no remainder left to damage. Damages should be supported by an appraiser to the same extent as the value of a property acquisition.

Consequential Damages:

Consequential damage is defined as a negative influence to neighboring property arising as a result of acquisition and/or construction. Some properties adjacent to the proposed right of way may suffer damages as a result of a grade change or other effects of construction. The appraisal of consequential damages is typically a unique appraisal assignment.

Severance Damages:

Severance damage is the diminution of the market value of the remainder area, in the case of a partial taking, that arises by reason of the taking and/or the construction of the highway project in the manner proposed.

Proximity Damages:

Defined as an element of severance damages that is caused by the remainder's proximity to the highway improvement being constructed. This type of damage is typically measured using comparable sales. The appraiser investigates and analyzes several recently sold comparable properties located near roadways, with similar setbacks as that proposed for the subject property once the proposed roadway improvements are completed. The appraiser compares each of these sale properties with other properties that have been sold recently and are comparable except for

VDOT Right of Way Cost Estimate Guide

6/11/2021 Version: 3.00

their proximity to the highway. Upon completing this analysis, the appraiser can develop an estimate of damage, or lack thereof, attributable to proximity of a proposed highway project to the property that is being appraised.

It is often difficult to find recently sold properties that are similar enough to the subject property in the after situation to use for direct comparison. In this case, a proximity study may be one source of information for consideration. Proximity studies examine the impact of reduced distance between properties and roadways to determine any impact on market value. However, the appraiser should be careful when applying a proximity study to ensure that similar market conditions exist in the subject property market area when compared to the market area where the proximity study was completed. Likewise, the real estate product used in the study (e.g. “starter housing”) should be similar when compared to the property that the appraiser is valuing.

For example, if a proximity study is completed in a highly active market on “starter homes”, the study may reflect that market participants show no adverse reaction with respect to price paid because of a change in proximity to the roadway. However, it may be inappropriate to apply the result of this study to a “starter home” that is located within a slow market. In a slow market, a price difference may exist as buyers may expect a discount on the price given the proximity of the “starter home” to the roadway. Likewise, it may be inappropriate to use the proximity study completed using “starter housing” for an appraisal of a custom developed home, even if it is located in the same market with similar market conditions. Buyers with varying demographic characteristics, or buyers in a different market segment, may react differently to proximity concerns.

Please refer to Chapter 4 of the Right of Way and Utilities Manual, Section 4.3.22, “Damages” and Section 4.3.23 “Non-Compensable Damages” for a listing of damages that are considered compensable or non-compensable.

E. Cost to Cure Damages

If the proposed acquisition will damage the remaining property, the cost to cure method must be used when it is cost effective (i.e., if the cost to cure is less than the indicated amount of damage). However, under no circumstances can a cost to cure be used if the cost to cure exceeds the amount of damage that is indicated.

Example

The proposed acquisition includes a section of drainfield servicing a recently constructed home. This home has no access to public sewer. Its value prior to the proposed acquisition is estimated at \$200,000. A cost estimate of \$10,000 was obtained by the appraiser from a local contractor to relocate the drainfield out of the acquisition area. If the cure is not undertaken, the home’s value after the acquisition is estimated at \$50,000. Since the diminution in value is \$150,000 and the “cost to cure” (cost to re-establish a drainfield) is only \$10,000, the appraiser must conclude that the damage is curable and estimate the cost to cure damage at \$10,000.

Cost to Cure Damages – Specific Topics Highlighted

1. Fencing:

When VDOT acquires fencing that is serving a functional purpose (e.g., farm fence, security fence, etc.) and it is necessary for the continued use of the property, the appraiser will place a value to re-enclose the remainder with a similar-type fence (cost to cure). The estimated price to re-enclose the fencing is based on the cost to install and replace similar fencing in the area. For example, if the existing fence is three- strand barbed wire, the appraiser will document the replacement cost data by obtaining cost estimates from local fencing contractors to complete the work. The cost to re- enclose the property will be shown on the “Executive Summary” sheet of the appraisal report as a cost-to-cure damage, “incidental item”. In addition, the appraiser should state the cost source and provide the contact name and phone number so that the property owner may contact them to complete the job if they choose to do so.

If the linear feet of fencing required to re-enclose the property is less than the amount that is being acquired by VDOT, the depreciated value of the remaining fencing shall be paid to the owner as a site improvement. For example, 500 linear feet of fencing is located within the acquisition, after the acquisition, it will be necessary to install 400 linear feet to re-enclose the property, therefore, 400 linear feet of fencing shall be paid as a cost to cure item. The remaining 100 linear feet of fencing within the acquisition will be paid for based on the depreciated value of the fencing and itemized as an “other” improvement on the summary sheet of the report. The narrative explanation will be contained within the body of the appraisal.

All other fencing will be handled as a site improvement and valued as to its contributing value to the whole property. If the fence does contribute value, normally, it is computed on the cost new, less depreciation for condition and utility. A complete description of the fence will be included in the property description and its value included in the valuations of the whole property.

When a temporary and/or permanent easement lies behind the proposed right of way, it may be necessary to install temporary enclosure and/or security fence prior to construction. It is the appraiser’s responsibility to determine if the temporary fencing and/or permanent fencing will be installed as part of the construction contract or if it shall be included in the compensation to the owner. If the appraiser is unable to make a determination, they should contact their local Right Way and Utilities Manager and request clarification on the fencing status.

When the construction contract states that the fencing will be replaced, the appraiser will not pay to re-enclose the fencing for the property. If the permanent fencing is going to be installed, but temporary fencing is not, the owner shall be paid the cost to cure value necessary to enclose the property prior to construction. If neither temporary nor permanent fencing is to be included in the construction contract, the property owner shall be paid the cost necessary to install temporary fencing as well as the cost to install permanent fencing and the cost to remove the temporary fencing. It is not required that the temporary fencing be exactly the same as the permanent fencing.

2. Property Pins:

It will be assumed that all of the engineering information regarding the location of any property pins has been properly secured, verified, and located by the survey party and that this is correctly indicated on the plans. The appraiser should study the plans to determine if any property pins fall within the proposed right of way. Where there are property pins that fall within the acquisition, it will be the appraiser's responsibility to furnish an estimate of the cost of resetting or replacing the pins and explain same in the appraisal.

The estimate must be based upon the number of pins required to re-enclose the landowner's survey, *not the number of existing pins within the acquisition*. When the acquisition requires the replacement of multiple pins, the appraiser is expected to compare the cost of the per pin estimate to a total property survey cost. The estimated cost of resetting or replacing the pins will be shown in the appraisal and will be considered as part of the acquisition and identified as a pay item on the summary sheet under damage, cost-to-cure, incidental item.

11. RIGHT OF WAY DEFINITIONS FOR APPRAISALS

A

Abandonment – Cessation of use of right-of-way or activity thereon with no intention to reclaim or use again for highway purposes. (Sometimes called Vacation) (AASHTO)

Abstract of Title – A document showing the condensed history of the title to property, containing portions of all conveyances or other pertinent instruments relating to the estate or interest in the property, and all liens, charges, encumbrances and releases. (AASHTO)

Access Connection – Any roadway facility by means of which vehicles can enter or leave an arterial highway. Included are intersections at grade, private driveways and ramps, or separate lanes connecting with cross streets or frontage roads.

Acquisition – The process of obtaining right-of-way. (AASHTO)

After Value – The value of the remainder.

Appraisal – (1) An estimate and opinion of value, (2) Usually a written statement of the market value or value as defined by the appraiser of an adequately described parcel of property as of a specific date. A conclusion that results from an analysis of facts.

Appraisal Report – A written document in which is stated (1) the value conclusion, (2) the date as of which the value is estimated, (3) an adequate description of the property valued, (4) the reasoning in reaching the value conclusion, (5) the qualifying conditions, (6) market data, other factual data and processing by one or more of the three different approaches, and (7) the signature of the appraiser.

Approach Nose – An end of an island, or neutral area between roadways, which faces approaching traffic that passes either on one or both sides. (AASHTO)

Appurtenance – An item of property accessory to, or an adjunct of, a more important property, title to which usually passes with title to the principal property. Something which passes as an incident to land, such as right-of-way.

Arterial Highway – A general term denoting a highway primarily for through traffic, usually on a continuous route. (AASHTO)

At Grade Intersection – An intersection where all roadways join or cross at the same level. (AASHTO)

Auxiliary Lane – The portion of the roadway adjoining the traveled way for parking, speed-change, or for other purposes supplementary to through traffic movement. (AASHTO)

Average Daily Traffic – The average 24 hour volume, being the total volume during a stated period divided by the number of days in that period. Unless otherwise stated, the period is a year. The term is commonly abbreviated as ADT. (AASHTO)

B

Backfill – Material used to replace or the act of replacing material removed during construction; also may denote material placed or the act of placing material adjacent to structures. (AASHTO)

Backslope – That portion of the roadway between the side drainage ditch and the top of cut, usually measured as a ratio of horizontal distance versus each foot of increase in elevation, i.e., – 4 to 1 slope.

Basic Capacity – The maximum number of passenger cars that can pass a given point on a lane or roadway during one hour under the most nearly ideal roadway and traffic conditions that can be attained. (AASHTO)

Before Value – The value of the parcel prior to the acquisition and prior to considering any benefits and/or damages that arise from the roadway improvements that justified the acquisition.

Belt Highway – An arterial highway for carrying traffic partially or entirely around an urban area or portion thereof. (Also called circumferential highway). (AASHTO)

Berm – A horizontal ledge or bench part way up a slope. A longitudinal mound of earth used to deflect water; a dike-like earthen structure formed by materials excavated from a shallow ditch which parallels and adjoins it, used to control surface drainage.

Borrow – Suitable material from sources outside the roadway prism, used primarily for embankments. (AASHTO)

C

Cattle Guard – An opening in a fence which is not closed by a gate, but having a ground grill that cattle will not cross.

Causeway – Elevated construction over marshy land or water. It may be either an earth fill or bridge type structure.

Channelized Intersection – An at-grade intersection in which traffic is directed into definite paths by islands. (AASHTO)

Cloverleaf – A four leg interchange with loops for left turns and outer connections for right turns or two way ramps for these turns. A full cloverleaf has ramps for two turning movements in each quadrant. (AASHTO)

Condemnation – (1) The process by which property is acquired for highway purposes through legal proceedings under the power of eminent domain. (AASHTO) (2) The act of a federal, state, county or city government or district or public utility corporation vested with the right of eminent domain to acquire private property for public use when a public necessity exists. It is the act of a sovereign in substituting itself in the place of the owner and/or the act of acquiring all or part of the rights of the owner. (3) The term condemnation denotes the acquisition of property by the exercise of the right or power of eminent domain. Pursuant to this right or power, the sovereign, whether it is the federal or state government, or an agency to whom there has been delegated this right or power, may, upon payment of just compensation, acquire property for the benefit of the public.

Condemnation Increment - A percentage of money added to the estimate to account for increases from the estimated value amount to the actual final agreement amount. It is based on the estimated value of the Land + Buildings (if any) + Improvements + Damages. This not a contingency and should not be treated as such. Also known as “**Condemnation Increase**” on the PCES form used by VDOT.

Consequential Damages – A damage to property arising as a consequence of a taking and/or construction on other lands. (AASHTO)

Contingency – Money added to the base Right-of-Way estimate amount to cover plan changes or unknowns.

Contributory Value – The measurable monetary contribution of the improvement to the total property value.

Control of Access – The condition where the right of owners or occupants of abutting land or other persons to access, light, air or view in connection with a highway is fully or partially controlled by public authority.

Full control of access means that the authority to control access is exercised to give preference to through traffic by providing access connections with selected public roads only and by prohibiting crossings at grade or direct private driveway connections.

Partial control of access means that the authority to control access is exercised to give preference to through traffic to a degree that, in addition to access connections with selected public roads, there may be some crossing at grade and some private driveway connections. (AASHTO)

Corner Influence – The value effect of location at, or in proximity to, the intersection of two streets. The increment of value resulting from such location or proximity.

Cost to Cure – Damages, or a loss in value, may occur as a result of a right of way acquisition. Damages may be reduced or eliminated by additions or modifications that cure the problem. It may be possible to lessen damages by restoring or “curing” the improvement.

Court Costs – Money added to the estimate to pay attorney fees and other costs associated with litigation.

Cross Section – A view cutting through the roadway at right angles to the centerline showing the relationship of the various components of the roadway.

Cul-de-sac Street – A local street open at one end only and with special provisions for turning around. (AASHTO)

Culvert – Any structure not classified as a bridge that provides an opening under any roadway.

Curb Loading Zone – Roadway space adjacent to a curb and reserved for the exclusive use of vehicles during loading or unloading passengers or property. (AASHTO)

D

Dead-End Street – A local street open at one end only without special provisions for turning around. (AASHTO)

Dedication – The setting apart by the owner and acceptance by the public of property for highway use, in accordance with statutory or common law provisions. (AASHTO)

Depreciation – A loss in value brought about by deterioration through ordinary wear and tear, action of the elements or functional or economic obsolescence.

Design Hourly Volume – A volume determined for use in design, representing vehicular traffic expected to use the highway. The design hourly volume, abbreviated as DHV, should be the 30th highest hourly volume (30HV) of the future year chosen for design. Exception may be made on roads with high seasonal fluctuation, where a higher design hour volume may be required.

Design Speed – A speed determined for design and correlation of the physical features of a highway that influence vehicle operation. It is the maximum safe speed that can be maintained over a specified section of highway when conditions are so favorable that the design feature of the highway govern. (AASHTO)

Design Volume – A volume determined for use in design, representing traffic expected to use the highway. Unless otherwise state, it is an hourly volume. (AASHTO)

Diamond Interchange – A four leg interchange with a single one-way ramp in each quadrant. All left turns are made directly on the minor highway (AASHTO)

Direct Compensation – Payment for land or interest in land and improvements actually acquired for highway purposes. (Sometimes called direct damages.) (AASHTO)

Directional Interchange – An interchange, generally having more than one highway grade separation, with direct connections for the major left turning movements. (AASHTO)

Divided Highway – A highway with separate roadways for traffic in opposite directions. (AASHTO)

Donation – The voluntary conveyance of private property to public ownership and use without compensation to the owner. (AASHTO)

Drainage Area – The area that will drain to any given selected point.

Drainage Ditch – Any open water course other than gutters, constructed beyond the limits of cut or fill slopes. The depressed area within the roadway given over to the collection and handling of surface drainage within the right-of-way.

Drainage Easement – An easement for directing the flow of water. (AASHTO)

E

Easement – A right acquired by public authority to use or control property for a designated highway purpose. (AASHTO)

An interest in land consisting of the right to do an act, otherwise unprivileged, on the land of another. Where the easement is restricted to the use of land, it is appurtenant to the designated land and will pass with a transfer of the land. To create this type of easement, such as a right-of-way, the same formalities as those necessary in a conveyance are usually required. (AASHTO)

Eminent Domain – The power to acquire property for public use with just compensation therefore. (AASHTO). The right of the people or government to acquire private property for public use upon payment of just compensation.

Encroachment – A building, a part of a building, or obstruction that intrudes upon or invades a highway or a sidewalk or trespasses upon the property of another.

Enhancements – The increase in value to the remainder as a result of the roadway improvements. Enhancements may offset damages to the remainder but do not offset the acquisition.

Entrepreneurial Profit – A market derived figure that represents the amount an entrepreneur receives for his/her contribution to a project and risk involved; the difference between the total cost of development and marketing and the market value of the property after completion.

Escrow – A written instrument that is deposited by the grantor with a stranger or third party to be kept until the performance of a condition or the happening of a certain event, and then to be delivered over to the grantee. The usual type of escrow transaction is where the grantor delivers the deed to a third party, who in turn delivers the deed to the grantee as provided in the escrow agreement.

Estimate – An opinion developed from analysis of an adequate data program by one qualified to develop such an opinion; hence the opinion of an informed person. A preliminary opinion; the approximate cost of doing certain work.

Excess Condemnation – The policy on the part of the condemner of acquiring, by right of eminent domain, more property than is actually necessary for the improvement.

Expressway – A divided arterial highway for through traffic with full or partial control of access and generally with grade separation at intersection. (AASHTO)

Extraordinary Assumptions – Information within an appraisal report that presumes uncertain information to be factual. Any extraordinary assumption must be disclosed in the report. The difference between a hypothetical condition and an extraordinary assumption is that the hypothetical condition is known information and an extraordinary assumption presumes uncertain information to be factual.

E

Fair Market Value – The highest price estimated in terms of money which a property will bring if exposed for sale in the open market allowing a reasonable time to find a purchaser who buys with knowledge of all the uses to which it is adapted and for which it is capable of being used. The highest price that a buyer, willing but not compelled to buy, would pay; the lowest a seller, willing but not compelled to sell, would accept.

Fair Rental Value – The monetary amount reasonably expected for the right to the agreed use of real estate. It may be expressed as an amount per month or other period of time, or per room, per front foot, per square foot, or other unit of property. Usually, it is established by competitive conditions. It is synonymous with economic rent.

Fee Simple – An absolute estate of ownership in property including unlimited power of alienation. (AASHTO)

The largest estate or ownership in real property; free from all manner of conditions or encumbrances. It may be subdivided into numerous lesser estates, but the sum total of all existing estates in any piece of land is equivalent to a fee simple absolute. Any fee simple estate is potentially of perpetual duration. It will continue in the successive heirs and assigns, including the heirs of the assigns, until such time as the current title holder shall die without heirs. At that time, the estate will cease and the property will escheat to the State.

Fill – Use of material, or material used to equalize or to raise topography to a certain grade; to build up with fill; to fill low ground with sand, gravel or earth, etc.

Fill Slope – The portion of the roadway between the outside of the shoulder and the toe of the slope.

Flared Intersection – An unchannelized intersection, or a divided highway intersection without islands other than medians, where the traveled way of any intersection leg is widened or an auxiliary lane is added. (AASHTO)

Flood Plain – The areas along the courses of streams which are subject to overflow.

Flow Line – The profile of the low point on the inside of a drainage structure or channel.

Four Leg Intersection – An intersection with four legs, as where two highways cross. (AASHTO)

Freeway – An expressway with full control of access. (AASHTO)

Frontage Street or Frontage Road – A local street or road auxiliary to and located on the side of an arterial highway for service to abutting property and adjacent areas and for control of access. (AASHTO)

G

General Benefits – The advantage accruing from a given highway improvement to the community as a whole, applying to all property similarly situated. (AASHTO)

Grade – (1) The slope of a surface, such as a lot or road, with a vertical rise or fall expressed as a percentage of the horizontal distance; e.g., a 3% upgrade means a rise of 3 feet per 100 feet of horizontal distance. (2) Sometimes used in a sense of “on or at the same level”, e.g., a crossing at street grade; a lot at street grade.

Grade Line – The slope in the longitudinal direction of the roadbed, usually expressed in percent which is the number of units of change in elevation per 100 units horizontal distance. Also has a “general” use to mean the “highway profile.”

Grade Separation – A crossing of two highways, or a highway and a railroad, at different levels. (AASHTO)

Grantee – A person to whom real estate is conveyed; the buyer.

Grantor – A person who conveys real estate by deed; the seller.

H

Highest and Best Use – The most productive use, reasonable but not speculative or conjectural, to which property may be put in the near future. (AASHTO)

Highway Capacity – A measure of the ability of a roadway to accommodate traffic. Capacity of a roadway is affected by the composition of traffic, roadway alignment, profile, number and width of traffic lanes, adjacent development, vehicular speed and weather.

Highway Development Right – The right of owners to make changes in abutting property uses that, if exercised, would be inconsistent with present and future highway needs. (AASHTO)

Highway – Street or Road – A general term denoting a public way for purposes of vehicular travel, including the entire area within the right-of-way. (AASHTO)

Hypothetical Conditions – Reporting information in the appraisal report, which is known to be contrary to what exists. Any hypothetical condition must be disclosed in the report. The difference between a hypothetical condition and an extraordinary assumption is that the hypothetical condition is known information and an extraordinary assumption presumes uncertain information to be factual.

I

Improvements – Permanent additions to raw land that tend to increase the value of the property. Typical improvements may include buildings, fences, driveways, walls, wells, septic systems, and landscaping. In eminent domain appraising, the appraiser shall include the value to which the improvement within the acquisition adds to the property in the reconciliation of total compensation.

Interchange – A grade separated intersection with one or more turning roadways for travel between intersection legs. (AASHTO)

A system of interconnecting roadways in conjunction with a grade separation or grade separations providing for the interchange of traffic between two or more intersecting highways.

Interchange Ramp – A turning roadway at an interchange for travel between intersection legs. (AASHTO)

Intersection – The general area where two or more highways join or cross, within which are included the roadway and roadside facilities for traffic movements in that area. (AASHTO)

Interstate Highway System – The Interstate System shall be designated within the United States, including the District of Columbia, and it shall not exceed forty-one thousand miles in total extent. It shall be so located as to connect by routes, as directly as practicable, the principal metropolitan areas, cities, and industrial centers, to serve the national defense and to the greatest extent possible, to connect at suitable border points with routes of continental importance in the Dominion of Canada and the Republic of Mexico. (Title 23, U.S.C.)

Inverse Condemnation – The legal process by which a property owner may claim and receive compensation for the acquisition of, or payment for damages to, his property as a result of a highway improvement. (AASHTO)

Island – A defined area between traffic lanes for control of vehicle movements or for pedestrian refuge. Within an intersection, a median or an outer separation is considered an island. (AASHTO)

J

Jurisdictional Exception – An appraisal assignment condition that voids the force of a part or parts of USPAP, when compliance with parts of USPAP is contrary to law or public policy applicable to the assignment.

Just Compensation – A full and fair equivalent for the loss sustained by the owner as a result of acquiring and damaging private property for highway purposes. (AASHTO)

L

Lane – A portion of the traveled way for the movement of a single line of vehicles.

Legal Access – A right which an owner of land that abuts a highway has to use the highway for ingress and egress.

Local Street or Local Road – A street or road primarily for access to residence, business, or other abutting property. (AASHTO)

Location – The fixed position of the highway on the ground, including curves and tangents.

Loop – A one-way turning roadway that curves about 270 degrees to the right to accommodate a left turning movement. It may include provisions for a left turn at a terminal to accommodate another turning movement. (AASHTO)

M

Market Value – The most probable price, as of a specified date, in cash, or in terms equivalent to cash, for which the property rights should sell after reasonable exposure in a competitive market under all conditions requisite to a fair sale, with the buyer and seller each acting prudently, knowledgeably, and for self-interest, and assuming that neither is under undue duress. (The Appraisal of Real Estate 12th Edition) and The price which one, under no compulsion, is willing to take for property which he has for sale, and for which another, under no compulsion being desirous and able to buy, is willing to pay for the article. (*Talbot vs. Norfolk* 158 Va. 387, 163 S.E. 100; 1932)

Median – The portion of a divided highway separating the traveled ways for traffic in opposite directions. (AASHTO)

Median Lane – A speed-change lane within the median to accommodate left turning vehicles. (AASHTO)

Median Opening – A gap in a median provided for crossing and turning traffic. (AASHTO)

Merging – The converging of separate streams of traffic into a single stream. (AASHTO)

Merging End – An end of an island, or neutral area between roadways, beyond which traffic merges. (AASHTO)

Multileg Intersection – An intersection with five or more legs. (AASHTO)

N

Negotiation – The process by which property is sought to be acquired for highway purposes through discussion, conference, and final agreement upon the terms of a voluntary transfer of such property. (AASHTO)

Neighborhood – An urban or suburban residential (or commercial) area exhibiting a fairly high degree of homogeneity as to housing, tenancy, income, and population characteristics. They are often outlined by physical barriers such as railroad tracks, streams, commercial or industrial developments, hills, ravines, and by lines created by subdivision developments, difference in zoning ordinances, deed restrictions, or type or age of building development.

Nonconforming Use – A use that was lawfully established and maintained but that, because of

the application of a zoning ordinance to it, no longer conforms to the use regulations of the zone in which it is located.

O

Option – A written agreement granting a privilege to acquire property and interest therein at a fixed price within a specified period. (AASHTO) The right to purchase or lease a property at a certain price for a certain designated period, for which right a consideration is paid.

Outer Connection – A one-way turning roadway primarily for a right-turning movement. It may include provisions for a left turn at a terminal to accommodate another turning movement. (AASHTO)

Outer Separation – The portion of an arterial highway between the traveled ways of a roadway for through traffic and a frontage street or road. (AASHTO)

Overpass – A grade separation where the subject highway passes over an intersecting highway or railroad. (Also called Overcrossing). (AASHTO)

P

Parcel Before Acquisition – The original tract of land with improvements located on the land before the proposed acquisition. Sometimes, the land may include more than one parcel. When the land does include more than one parcel, the same person or entity must own them. Typically these parcels are joined together and share the same use.

Parkway – An arterial highway for non-commercial traffic, with full or partial control of access, and usually located within a park or a ribbon or park-like development. (AASHTO)

Partial Acquisition – The acquisition of a portion of a parcel of property. (AASHTO)

Passing Sight Distance – The minimum sight distance that must be available to enable the driver of one vehicle to pass another vehicle traveling 10 MPH slower than design speed, safely and comfortably, without interfering with the speed of an on-coming vehicle traveling at the design speed should it come into view after the overtaking maneuver is started.

Pedestrian Overpass – A grade separation designed to carry only pedestrian traffic over the highway.

Pedestrian Underpass – A grade separation designed to carry only pedestrian traffic under the highway.

Planting Easement – An easement for reshaping roadside areas and establishing, maintaining and controlling plant growth thereon. (AASHTO)

Plat – A map or plan of measurement. A representation on paper of a piece of land. A subdivision of land marked upon the earth and represented on paper.

Profile Grade – The trace of a vertical plane intersecting the top surface of the proposed wearing surface, usually along the longitudinal center line of the roadbed. Profile grade means either elevation or gradient of such trace according to the context.

Prescriptive Easement – An easement created by the open, notorious, uninterrupted, hostile, and adverse use of another's land for 20 years or as referenced by code(s). Section 33.1-184 of the Code of Virginia references “Evidence as to existence of a public road.” Unlike easements by express or implied grant, an easement by prescription may be extinguished by non-use.

Proximity Damage – A damage to a property arising as a consequence of the nearness or proximity of a highway, or other type of construction, to the improvements on the property. The diminution of the market value of a property as a result of the encroachment and proximity of a highway or other type of construction.

Q

Qualitative Analysis – The study of the relationships indicated by market data without recourse to quantification. To apply this technique, the appraiser analyzes comparable sales to determine whether the comparables characteristics are inferior, superior or equal to those of the subject property. Unlike quantitative analysis, the adjustments considered in relative comparison analysis are not expressed as dollar or percentage amounts.

Quantitative Analysis – The method of comparison using mathematical processes to identify which elements of comparison require adjustment and to measure the amount of these adjustments. Quantitative adjustments are developed as either dollar or percentage amounts.

R

Radial Highway – An arterial highway leading to or from an urban center. (AASHTO)

Railroad Grade Crossing – The general area where a highway and a railroad cross at the same level, within which are included the railroad, roadway, and roadside facilities for traffic traversing that area. (AASHTO)

Remainder Parcel – The portion of a property that remains after the proposed acquisition. Taking the land “before acquisition” and subtracting the land, easements and improvements proposed for acquisition results in the Remainder Parcel.

Residue Parcel – If the acquisition severs the remainder so that multiple parcels comprise the remainder, each parcel is referred to as a residue.

Retaining Walls – Vertical concrete walls, usually constructed adjacent to the roadbed, normally emplaced where restrictive right-of-way or design will not permit the use of normal slopes in embankment or cut sections.

Right of Access – The right of ingress to a highway from abutting land and egress from a highway to abutting land. (AASHTO)

Right of Immediate Possession – The right to occupy property for highway purposes, after preliminary steps for acquisition have been taken and before final settlement. (AASHTO)

Right of Survey Entry – The right to enter property temporarily to make surveys and investigations for proposed highway improvements. (AASHTO)

Right-of-Way – A general term denoting land, property or interest therein, usually in a strip, acquired for or devoted to a highway. (AASHTO)

Right-of-Way Admin Costs - Money added to an estimate to cover the costs of RW staff work being done by Appraisers, Negotiators and any other RW team member that works on the project.

Right-of-Way Appraisal – The determination of the market value of property including damages, if any, as of a specified date, resulting from an analysis of facts. (AASHTO)

Right-of-Way Estimate – An approximation of the market value of property including damages, if any, in advance of an appraisal. (AASHTO)

Right-of-Way P.E Costs - Money added to an estimate to cover the costs for the RW work done by the Appraisers, Negotiators and any other RW team member that does work on the project before the Notice To Proceed authorization.

Rip Rap – Slope protection emplaced on steep cut banks or embankments to eliminate the occurrence of erosion, consisting of a thin concrete slab, grouted rock, wire fabric or stone blankets.

Roadbed – The graded portion of a highway, usually considered as the area between the intersections of top and side slopes, upon which the base course, surface course, shoulders and median are constructed. (AASHTO)

Roadside – A general term denoting the area adjoining the outer edge of the roadway. Extensive areas between the roadways of a divided highway may also be considered roadside. (AASHTO)

Roadway – The portion of a highway, including shoulders, for vehicular use. A divided highway has two or more roadways. The portion of the highway within the limits of construction. (AASHTO)

Route – The general position of a highway relative to major features of topography, such as centers of population or important terrain features.

S

Scenic Easement – An easement for conservation and development of roadside views and natural features. (AASHTO)

Setback Line – A line outside the right-of-way, established by public authority on the highway side of which the erection of buildings or other permanent improvement is controlled. (AASHTO) A line established by law, deed restrictions or custom, fixing the minimum distance

of the exterior face of the building, walls, and any other construction from a street or highway right-of-way line.

Severance Damage – Loss in value of the remainder of a parcel resulting from an acquisition. (Sometimes called Indirect Damages.) (AASHTO) Any element of value arising out of the relation of the condemned portion to the tract of which it was a part. More specifically, in a partial acquisition, the diminution of the market value of the remainder area as a result of the severance of the part acquired.

Shoulder – The portion of the roadway contiguous with the traveled way for accommodation of stopped vehicles, for emergency use, and for lateral support of base and surface courses. (AASHTO)

Side Ditch – A prepared open water course, paved or not, contiguous to both the shoulder line and the base of the cut slope.

Sideslope – That portion of the roadway between the outside edge of shoulder and the adjacent drainage ditch, usually measured as a ratio of horizontal distance versus each foot of decrease in elevation.

Sight Distance – The length of roadway visible to the driver of a passenger vehicle at any given point on the roadway when the view is unobstructed.

Sight Line Easement – An easement for maintaining or improving the sight distance.

Slope – The inclined graded area beyond the shoulder and extending from the shoulder to the natural and undisturbed surface of the ground.

Slope Easement – An easement for cuts or fills. (AASHTO)

Special Benefits – Advantage accruing from a given highway improvement to a specific property and not to others generally. (AASHTO)

Special Negotiations – Are negotiations with property owners having unusual operating circumstances and/or organizational structures. They include federal and state agencies; companies including CSX Transportation, Inc. (CSX) and subsidiaries; Norfolk Southern Corporation (NS) and subsidiaries; other privately owned railroads; Dominion Energy Virginia (DEV); and certain authorities including the Washington Metropolitan Area Transit Authority (WMATA), the Metropolitan Washington Airports Authority (MWAA), the Northern Virginia Regional Park Authority (NVRPA) and property owners which are required by law to have their property mitigated with replacement property.

Specifications – A general term comprising all directions, provisions and requirements contained within a specifications book together with such as may be added or adopted as supplemental specifications.

Speed-Change Lane – An auxiliary lane, including tapered areas, primarily for the acceleration or deceleration of vehicles entering or leaving the through traffic lanes. (AASHTO)

Stopping Sight Distance – The distance required by a driver of a vehicle, traveling at a given speed, to bring his vehicle to a stop after an object on the roadway becomes visible. The distances used in design are calculated based on the driver's ability to see a 6-inch object in the road ahead when his eye level is 3 ¾ feet above the roadway surface.

Storm Sewer – An underground conduit for drainage of surface water. An enclosed conduit that carries off the surface drainage through a series of surface inlets.

Structural Layout – The bridge layout that is prepared on a structural plan and profile sheet showing the plan of the proposed structure and a profile along the centerline of the proposed structure.

Subbase – The layer or layers of specified or selected material of designed thickness placed on a subgrade to support a base course. (AASHTO)

Subgrade – The top surface of a roadbed upon which the pavement structure and shoulders are constructed. (AASHTO)

T

Temporary Construction Easement – A temporary construction easement is a temporary interest in land, generally used by the contractor, for the construction of a proposed improvement. This area is located outside of the proposed roadway and is typically needed for grading purposes. After construction of the public improvement is completed, the temporary easement is extinguished and the unencumbered fee interest in the land reverts back to the owner.

Three Approaches – The basic methods or techniques by which market data are processed into an indication of value, designated as:

- 1) Comparative Sales Approach variously referred to as Comparison Approach, Sales Comparison Approach, Market Data Approach.
- 2) Cost Approach, sometimes referred to as Summation Approach.
- 3) Net Income Capitalization Approach, sometimes referred to as Capitalization Approach and Income Capitalization Approach.

Through Street or Through Highway – Every highway or portion thereof on which vehicular traffic is given preferential right-of-way, and at the entrances to which vehicular traffic from intersecting highways is required by law to yield right of way to vehicles on such through highway in obedience to either a stop sign or a yield sign, when such signs are erected as provided in this act. (Uniform Vehicle Code – 1956). (AASHTO)

Title Search – An investigation of public records and documents to ascertain the history and present status of title to property, including ownership, liens, encumbrances, charges, and other interests. (AASHTO)

Toll Road – A highway, bridge, or tunnel open to traffic only upon payment of a direct toll or fee. (AASHTO)

Total Acquisition – When all land and improvements on a parcel of property is needed for roadway improvements.

Total Acquisition with Uneconomic Remnant – When the entire property is acquired, though only a portion is required for the proposed project. The area to be acquired, but not necessary for the roadway improvements will be identified as “Proposed Acquisition”.

Tunnel – Vehicular – A subterranean passageway designed for the accommodation of vehicular traffic

Turning Movement – The traffic making a designated turn at an intersection. (AASHTO)

Two-Way Ramp – A ramp for travel in two directions. At a cloverleaf, it serves as both an outer connection and a loop. (AASHTO)

U

Unchannelized Intersection – An at-grade intersection without islands for directing traffic into definite paths. (AASHTO)

Underpass – A grade separation where the subject highway passes under an intersecting highway or railroad. (Also called Undercrossing). (AASHTO)

Uneconomic Remnant – When the state makes a partial acquisition of the landowner’s property, some or all of the remaining land may be of nominal value because the parcel cannot be independently developed (“an uneconomic remnant”). It may not be useable because of the size, shape or utility.

V

Valuation – The act or process of estimating value. The amount of estimated value.

Volume, Traffic – The number of vehicles passing a given point during a specified time period. (AASHTO)

Z

Zoning – The division of an area into districts and the public regulation of the character and intensity of use of the land and improvements thereon. (AASHTO)

Zoning Ordinance – The exercise of police power within the municipality in regulating and controlling the use of property.